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ABSTRACT

This document is the second part of a comprehensive study designed to review child development data and program evaluation data so that proposals for Federal program planning can be made. This section (Volume 2) consists of five chapters that review project evaluation data in the five major modes of child intervention. Chapter 1 looks at evaluation data of Federally sponsored early childhood education programs, including Follow Through, the national network of Research and Development Centers, and Performance Contracts experiments. Chapter 2 focuses on preschool intervention of the sort now implemented under Head Start. Chapter 3 reviews current knowledge about the influence of day care on child development, when intervention occurs with children between 0-3 years. Chapter 4 is concerned with family intervention, based on evaluation data of programs involved in parent education, parent training, family therapy, and provision of social services. The final chapter reviews data arising from evaluation of health care projects. (DP)

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FEDERAL PROGRAMS FOR YOUNG CHILDREN: REVIEW AND RECOMMENDATIONS

VOLUME II: REVIEW OF EVALUATION DATA FOR FEDERALLY SPONSORED PROJECTS FOR CHILDREN

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REVIEW AND RECOMMENDATIONS

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Chapter 7: Early Elementary Education

Summary

Programs in compensatory education have been based in part on uncertain premises about the crucial role schools can play in increasing social and occupational mobility and in reducing economic inequality. Still it is proper to expect that among other desirable goals, compensatory education should strongly aim at raising the academic achievement of primary grade children. Recognizing that standardized achievement tests reflect non-school factors as well, the gains in academic achievement, if produced, should in turn show up on these tests.

Projects have been classified on the dimensions of classroom process, primary goal orientation, and organizational change.

On the dimension of classroom process: Few projects are successful which merely amplify existing or traditional services. Since most Title I projects fall into this category, the small number of successes relative to the large number of projects is disheartening. Those projects which attempt to reorganize classroom process show greater success. Specifically, children participating in projects employing new instructional strategies in academic (i.e., reading, arithmetic) areas generally showed educationally significant gains; those which aimed at cognitive enrichment rather than academic goals had mixed results. Computer-assisted instruction data at the elementary level are limited. Two projects developed at Stanford show promising results but more replications are needed. Instructional television as it has been used so far seems to be as effective but no more so than traditional instruction. Results from "the Electric Company" thus far are preliminary and cover use and enthusiasm, not results.

On the dimension of goal orientation: Except for projects with academic goal orientation, there are few data. Academically-oriented projects, usually accompanied by some reorganization of classroom process, seem to be effective in increasing performance on standardized achievement tests, and some have even raised performance above the norm.

On the dimension of organizational change: The major changes discussed include busing, educational performance contracts and parent-mediated projects.

Busing studies have been poorly conducted to date. Overall they show no consistent effects on achievement measures of the bused children. Effects on educational attainment are equivocal but seem to indicate that certain busing projects have improved the quality of higher education that blacks receive. However, busing to achieve desegregation is motivated by complex rationales beyond improved achievement. Busing for reasons involving political socialization, assimilation, and equity cannot be much illuminated by the results on IQ or achievement tests.

Educational performance contracts have not yet been adequately evaluated. Two major studies by Rand and Battelle did not show an overall increase in academic performance of students even though the projects also reorganized classroom process and were academically-oriented. The data however cover only the first year of operation.

In parent-mediated projects, the independent effects of parent involvement have not been separated from those of other intervention aspects. Hence while successful projects and parental involvement tend to go together, one cannot justifiably draw causal inferences. Parent training projects, where parents learned specific skills for teaching their own children, appeared more consistently related to changing parental attitudes than projects where parents were merely involved.

Qualifications about conclusions: Actual project descriptions and major reviews of early elementary education compensatory projects have furnished the data on which conclusions have been based. There are, however, serious difficulties with this approach:

1) Project descriptions, fundamental to our categorizing of projects, are often too vague and general to be useful and do not always correspond to the project in operation.
2) Evaluation measures are limited to IQ and achievement tests. Our ability to evaluate social and emotional realms is primitive and no widely used standardized tests are available. Those instruments which are used are of unknown reliability and validity.
3) Statistically significant gains may be educationally insignificant if one hopes that lower income children will completely catch up with middle class groups.
4) Most evaluation information measures effects of projects as implemented over one year only. At times this leads to judging projects as successful when, over the course of several years, they would not be. Similarly, it tends to make projects that involve major organizational changes (which might depress achievement in the short run) look unsuccessful when in fact they are not so.
5) Very few projects have followed children for longer than one year or have followed children beyond the third Grade.

Title I and Follow Through: Findings from large-scale evaluations of Title I are briefly presented. There is little evidence of a positive overall impact of Title I on eligible and participating children. At the state and local level, some data indicate positive benefits; but the proportion of such projects is small. At least part of the depressing results of Title I must be attributed to the lack of adequate implementation and enforcement of guidelines.

Only the first evaluation of effects of Follow Through models has been released. Because of small differences found between experimental and control groups and because of problems in the analyses, conclusions regarding the effectiveness of Follow Through must await future evaluations.

The possibility of summer school for remediation and enrichment has been suggested. Many Title I summer school projects are offered. While summer projects remain a possible strategy to prevent "regression" during the summer, thus far they look no more successful than regular school year compensatory programs.

Components of successful projects. We have abstracted the characteristics of compensatory education projects in the early primary grades which seem to be common to projects which are successful in producing significant achievement gains. Simply providing extra resources usually has no positive effect on student achievement. What does seem to matter is the way the additional resources are used. These characteristics are: 1) clearly stated academic objectives; 2) small group or individualized instruction; 3) parent involvement; 4) teacher training in the methods of the project together with careful planning; 5) directly relevant and intensive instruction; and possibly 6) high expectations and good atmosphere. These characteristics seem relevant to the way in which compensatory education is provided. Although a certain level of resources is required to maintain educational projects with these characteristics, that level of resources does not guarantee the most effective process of educating.

Chapter 7: Early Elementary Education

In the early 1960's, there was a significant heightening of American concern about problems of poverty and ethnic-racial inequities in a generally prosperous and democratic society. One of the clear-cut differences between the poor and black, on the one hand, and the middle class and white ethnic populations, on the other, was the amount of schooling each received and the scores attained by their children on measures of school achievement. Following traditional American assumptions and ideology it was assumed that if public schooling were provided, the gaps in school attainment and achievement between the poor and nonpoor, the black and non-black, could be eliminated. This unbiasing would lead to equal opportunity and the reduction of inequality. The federal government, hitherto only a sporadic and fitful force in public schooling, became actively involved in providing funds for compensatory education and in pursuing school desegregation.

These two federal moves, as well as others in public education, were based on widely-shared assumptions about the goals and mechanisms of public schooling which led to the faith that ending educational inequality would substantially reduce overall inequality. Schools were seen as the central public institutions which facilitated equal opportunity for all social classes and ethnic groups, and which led to increased overall prosperity for all Americans. The more schooling, the greater the skills and abilities of the population. Education was an investment in human capital which would pay off indefinitely in enhanced productivity. Beyond this, schooling had a vital role in producing an informed citizenry, politically socialized and culturally cohesive, upon which lay the strength of our democracy. If one wished to increase achievement and other school outcomes, one would improve school quality by increasing expenditures for school inputs.

In the classrooms, children developed vitally important skills and achievements required by an ever more complex and technologically sophisticated economy and society. In classrooms, too, they developed social behaviors like cooperation and teamwork, good sportsmanship, initiative, individuality, and civic requisites such as loyalty to America and understanding of and practice in its democratic ideals. Since classrooms existed as production sites for the development of major goals, there was an uncomplicated relationship between a child's development, his school experience and the quality of his schooling.

To measure the child's capacity and realization of achievement, tests were devised. They were assumed to be valid indicators of present progress and future prospects. Those who did better on tests would get more schooling and advance to appropriate status and income positions. Those who did less well would be developed fully in their noncognitive capacities and would find jobs which fit their particular skills.

Today many of the assumptions which supported the ideology of public schooling have been seriously attacked. Differences in school quality which were thought to exist between schools of lower income or black populations and those of the white middle class are either non-existent or small, and do not necessarily favor the higher achieving groups. It seems as though increased spending to improve school quality does not generally raise achievement. School achievement test scores have little significant correlation with future income or status. While years of schooling are moderately correlated with adult status, the correlation probably owes more to social conventions than to the increased productivity of more-schooled workers.

Economists no longer accept the thesis that educational investment or human capital investment increases economic productivity indefinitely. Sociologists argue that schools are more important as sorting mechanisms, rewarding the background training of the middle class with success and educational attainment. Others have attempted to show that schools also reinforce the work ethic, obedience and discipline-training of working class children which prepare such children for lower status occupations. Such criticisms have lead to the questioning of a simple production metaphor of schools that has been widely accepted in the past. The result has been a disillusionment with the notion that schools can end inequality, and a pessimism about the role of schools in advancing equal opportunity.

According to traditional thinking, one should judge the efficacy of schooling by its achievement results. That school is supposedly best which produces the greatest gain in cognitive achievement test scores, and which succeeds in developing desirable social and political behavior among its students. Since noncognitive development is not accurately measurable by standardized tests, cognitive achievement test scores (which have been standardized) become the major criterion.

With the new understanding of the goals and mechanisms of schooling, one can no longer accept the use of this simple yardstick to make a complete judgment of school success. Yet it is important to resist moving to the opposite position, which claims that school achievement scores are not a relevant measure of school efficacy.

School climate matters a great deal to teachers, students and parents. So too does the fairness of its sorting and selection procedures. The standards that must be employed should reflect the complexity of the goals and the variety of the clientele. It remains true, however, that schools probably do have an important role in the production both of achievement and of enhancing moral, social and political development. While the role of human capital development in economic progress has sometimes been overstated, it is clearly of some consequence in explaining the vitality of our economy and its high productivity.

In this chapter we review programs in compensatory education. They have been evaluated largely by techniques developed before the 1960's, which focused on academic achievement. Independent of the inflated expectations about school reform, one can argue that increasing and unbiasing achievement of American children is a worthwhile goal of public schooling in itself. In the early grades with which we deal here, where achievement reflects primarily basic literacy, achievement tests have a "face validity" as a measure of school efficacy.

The chapter is developed against a background of several major studies which have attempted to identify school resources associated with school effectiveness. The Equality of Educational Opportunity Study (EEOS) or Coleman Report found that within reasonable boundaries few factors make an educational difference, and that where there were differences, they probably resulted more from factors of social class and family background than from any substantive aspect of the school. Studies since the Coleman Report have come to similar conclusions. Jencks et al. (1972), in his study of the effects of family and schooling, reported that "most differences in adult test scores are now due to factors that schools do not control.' (p. 221). Stephens (1967) reviews a substantial range of data on the effect of certain school factors and procedures on achievement. Among others, he found attendance, class size, counseling facilities, amount of time spent studying, discussion versus lecture methods, and programmed instruction have little effect on achievement. Averch et al. (1971) concur in a large study of educational effectiveness: "the resources for which school systems have traditionally been willing to pay a premium--in particular, teachers' experience and teachers' advanced degrees--do not appear to make a major difference in student outcomes (achievement scores)."

Mosteller and Moynihan (1972) note that the major result of the EEOS was its shift of emphasis from defining equality in terms of inputs or resources (physical facilities, teacher training, racial mixture, etc.) to outputs or outcomes (namely, academic achievement). While this emphasis on outputs (bringing with it the notions of accountability and careful definitions of objectives) is valuable in some respects, it must always be remembered that the types of outputs we are capable of measuring are limited and that schools have goals in addition to increasing achievement in academic skills. These two limitations are obviously interrelated. A third limitation of these major studies is related to the types of school resources thay have used; the studies have dealt with the educational system as it now exists and have not investigated the effects of changing the manner in which resources are used. It is important to know if wide variance in inputs or alternative measures of outputs would lead to difference conclusions about the current and potential effects of schooling.

We have searched for early elementary projects in Grades 1 through 3 (1) that are exemplary of the diversity of approaches to early education, and (2) that have yielded positive evaluation data. Our main questions have been: (1) what types of projects have been developed to "compensate for disadvantage"? (2) which of these projects are effective? and (3) is it possible to determine why they are effective?

Wherever possible we have relied on secondary sources to identify projects. Hundreds of compensatory projects for the early elementary grades have been developed, and it would have been impossible for us to identify, let alone review, each one individually. Several major reviews exist, however. For three years the American Institutes for Research (AIR) has surveyed educational programs for disadvantaged children rating them on efficacy data and publishing brief descriptions of those that have been successful (Hawkridge, Chalapsky, and Roberts, 1968; Hawkrdige, Campeau, Dewitt, and Trickett, 1969 ; Wargo, Campeau, and Talmadge, 1971). AIR has also published a review of Title I projects (Wargo et al., 1972). A number of other reviews on compensatory education have been useful: Center for Educational Policy Research, 1971; McDill, McDill and Sprehe, 1969; and Averch et al., 1971. Other information sources have included review articles (on instructional television, behavior modification, and computer-assisted instruction), the Rand and Battelle Columbus reports on performance contracting, and a variety of individual project reports. The Follow Through models currently in operation constitute a major collection of alternative approaches to elementary education, although data on the effectiveness of the individual models are not yet available.

Our approach has been to develop a taxonomy with which to organize projects. We present a brief description of the taxonomy, then more detailed discussions of each category with descriptions of a few exemplary projects, tables of results on relatively "successful" projects in that category, and finally, general conclusions regarding the effects of the projects on disadvantaged children. Before presenting the taxonomy, however, we shall discuss some of the major problems that have been salient throughout this review.

Project descriptions are fundamental to our ability to categorize projects and to our ability to relate project differences to outcome differences. Ideally, observational information on the differences in actual classroom activities and interactions would be used, but in its absence we must rely on descriptions. Many of these descriptions, however, are too vague and general to be useful. For example, in reviewing Title I project descriptions, the Center for Educational Policy Research (CEPR) eliminated 85% of around 700 evaluations because instructional activity was only sketchily reported or was not reported at all (1971). In addition, the extent of correspondence between the project description and the project in operation is unknown.

Second, evaluative measures are primarily limited to the cognitive realm, to IQ and achievement tests. If the major goals of the project are academic in nature, then achievement tests would seem to have some amount of face validity -- at least at the early grades where they assess basic skills. But most programs have noncognitive in addition to cognitive objectives, and some projects have major goals in noncognitive realms (social, emotional). Our ability to evaluate social or emotional behavior is primitive. There are no widely used, standardized tests in the socio-emotional realm. Hawkridge et al. reported that of 30 different noncognitive instruments used by 8 programs (that were identified), only 4 were commercially available and not one of these 4 was used by more than one project. Furthermore, "none of the four programs that used commercial or research instruments compared student performance to available norms, or at least they did not report such comparison" (1971, p. 32). Frequently projects develop their own noncognitive instruments--generally self-rating scales, questionnaires, student behavior inventories, or rating scales to be completed by parents or teachers. The reliability and validity of these instruments is often unknown, and standardization, even local, is rare.

In closing their discussion of noncognitive measures, Wargo et al. raise the following issues:

> Finally, an even more serious problem associated with the state-of-the-art is the reference group and norm problem. This problem is directly related to the question of educational significance of noncognitive benefits. What degree of improvement in the noncognitive domain should be considered educationally significant? Should improvements be greater than that expected for non-treated average or for disadvantaged children during a comparable period of time? Should improvements be compared to norms based on average or on disadvantaged children? Although these questions are presently unresolved, they should be more actively debated. (1971, pp. 34-35)

This question is one which can easily become problematic because of differing value systems.

Third, the issue of educational versus statistical signficance is important. Statistically significant gains can be educationally insignificant. Wargo et al. (1971) considered achievment test gains to be educationally significant if a one-month gain in score was obtained for each month spent in the project. The average monthly gain on achievement tests is around 0.7 months for disadvantaged children. Even if children do make gains greater than month for month, however, they may not catch up to the norm, i.e., to the average performance expected for their grade level.

Fourth, much of our evaluative information concerns the effects of the project as implemented during one year. A project that is successful one year may not be successful the next year. In 1970-71, AIR attempted to obtain additional evaluative data on 31 projects they had termed "successful" in 1968 and 1969. Over all age levels AIR found that 27 of the original 31 projects were still in operation, and almost half were being replicated at other sites. Most of the replications were partial or small-scale, however, and none provided usable data. Although 26 projects had conducted new evaluations, 5 did not release them and 7 provided data unsuited for conclusions about continued effectiveness. Of 14 projects providing usable data, 9 had continued to be successful and 5 had not. Of the 14, 6 were elementary school projects; three remained successful and three were unsuccessful. These data indicate that evaluation of projects should span several years. It is also possible that the opposite effect -- projects not initially successful becoming successful over time -- might be found.

One final point concerns the need for longitudinal evaluation of the children who participate in compensatory projects. Very few projects have followed children for longer than one year, or have followed children beyond the third grade. The longitudinal findings of preschool projects, which show a gradual decline in scores over several years, make it imperative that elementary projects be similarly assessed to determine if positive effects are being maintained.

Taxonomy of Early Elementary Projects

We have developed the following taxonomy of projects as a heuristic to aid in comparing and contrasting various approaches to early elementary education and their effects. The taxonomy is based on variables which are useful in organizing the diverse projects, and which may be related to outcomes.

Previous efforts to develop taxonomies have been less extensive for early elementary projects than for preschools. In their 1969-1970 evaluation of Follow Through models, the Stanford Research Institute developed a 5-category taxonomy based on salient aspects of the models. Table 7.1 presents their category system and the models included within each category. More recently, the Center for Educational Policy Research (1971) at Harvard University used a two-category taxonomy based on "structure" for categorizing Title I elementary education projects. The two categories were structured projects (specific objectives, sequenced instruction, individual diagnosis and prescription) and general enrichment projects (multiple program objectives, extension of typical classroom activities).

Both the SRI and CEPR taxonomies dealt only with total classroom projects. This review, however, considers specific instructional components, such as computer-assisted instruction, and broader organizational changes, such as performance contracting.

A three-dimensional taxonomy has been developed to enable an orderly consideration of approaches to compensatory education. The taxonomy has not been easy to develop, and we are not completley satisfied with it. All projects do not fit clearly into one level on each dimension and

TABLE 7.1

1969-70 Stanford Research Institute Taxonomy of Follow Through Models

Category Description	Models
Emphasis on curriculum and teaching methods within the classroom. Extensive use of programmed learning, teaching devices, structured curriculum broken into small units of learning, and systematic reinforcement and reward.	(1) IPI and Primary Education Project (2) Behavior Analysis (3) Mathemagenic Activities Program (4) Language Development-Bilingual Education (5) Responsive Environments Corporation Model (6) Systematic use of Behavioral Principles
Strong commitment to humanistic values with special emphasis on development in noncognitive areas (e.g., self-worth, respect for others, curiosity). Use of inquiry or discovery model of learning.	(1) Bank Street (2) Education Development Center (3) Responsive Environment
Approaches less systematically similar to one another. Draw from variety of theoretical positions and select techniques on pragmatic grounds.	(1) Behavior-oriented Prescriptive Teaching (2) California Process Model (3) Cognitively Oriented Curriculum (4) Cultural Linguistic Approach (5) Florida Parent-Educator Model (6) Hampton Institute Ungraded Model (7) Home-School Partnership (8) Interdependent Learner Model (9) Tucson Early Education Model
Self-Sponsored Projects	(1) Dade County, Fla. (2) Detroit, Mich. (3) Hawaii (4) Monongalia County, W. Va. (5) PS-33, New York City, N.Y. (6) Philadelphia VII, Pa. (7) Portland, Ore. (8) San Diego, Calif.

TABLE 7.1 (Continued)

Category Description	Models
Parent-Implemented Projects. Political orientation, with high levels of parent participation in policy making and program planning.	(1) Roxbury Community School, Dorchester, Mass. (2) Philadelphia III, Pa. (3) Pulaski County, Ark. (4) East Harlem Block Schools, New York City, N.Y. (5) Highland Park Free School, Boston, Mass.

there are no exemplary projects for some categories. We have chosen to describe projects which are clearly exemplary of the category, and to present tabular results in the most reasonable location. In some cases, the project could also have been summarized under another heading.

The dimensions used to classify projects and the categories within them are:

Dimension 1: Classroom process

1. Amplification of traditional classroom services
2. Reorganization of classroom process

Dimension 2: Goal orientation

1. Academic achievement
2. Cognitive enrichment
3. Adjustment

Dimension 3: Organizational changes

1. Parent-mediated
2. Performance contracting
3. Busing
4. Vouchers

Dimension 1: Classroom Process

Dimension 1 includes two levels: (1) amplification of normal services and (2) reorganization of classroom process. The basic assumption of level 1 is that the educational system as it now exists could overcome its problems if it were enabled to operate more intensively. Projects which have been placed here typically use additional resources to pay for more and better qualified teachers and teacher aides, newer or more extended curriculum materials, more books and audiovisual materials and the like, in an effort to augment the intensity and therefore the effectiveness of normal classroom processes. Many Title I projects fit the description of level 1 projects.

The second level, reorganization of the classroom process, presupposes some fundamental changes in traditional education. Goals, instructional processes, instructional personnel or student-teacher relationships may be altered. Projects involving substantial tutoring by parents or older children, projects using computer-assisted instruction or instructional television, and projects which place a major emphasis on individualized diagnosis and prescription toward the attainment of specified behavioral objectives all fall into this category because they alter in some way the process of instruction occurring in the classroom.

Rarely, however, are there pure examples of each level. We have classified projects on the basis of their main thrust. For example, if a project decreases its student-teacher ratio, encourages the purchase of new materials by the teachers, attempts to keep parents informed of the progress of their children, and does some work in diagnosis of the problems of children experiencing difficulty, we would categorize this project in level 1. However, if a project implements a reading curriculum with specific behavioral objectives, diagnoses the problems of each child, and instructs on the basis of the diagnosis we would categorize the project in level 2.

Dimension 2: Goal Orientation

The categories comprising the dimension of goal orientation represent separate but not mutually exclusive primary emphases. These designate the "content" project planners believe are most important for educational efforts. The three goal orientations we shall use in our classification scheme are academic, cognitive, and adjustment. Rarely does any project focus only on academic, cognitive, or adjustment goals, however. This dimension can best be conceptualized as concentric rings rather than as a continuum or even as overlapping circles. Academic projects adopt scholastic achievement as their primary goal. Generally, they view their chief goal as imparting the basic skills (reading, language, mathematics) and their success is measured by standardized achievement tests and by performance in school (i.e., grades). These projects form the innermost circle.

Cognitive projects are represented in the second circle. They are focused on more general learning processes and problem-solving techniques. Cognitive projects are quite diverse. They might focus on language, on cognitive skill training, on providing more experiences and knowledge building, on sensory training, or on discovery processes. (See Chapter 8 for a more detailed description of those five emphases within cognitively oriented projects.) Typically these projects include academic objectives but they take a broader perspective; the experiences provided serve as a base for more meaningful development of academic skills.

Adjustment-oriented approaches are still broader in their focus and may be represented by the outer concentric ring. These approaches hold that the way a child feels about himself, his activities, and others critically influences his attainments in the cognitive and academic realms. Therefore, although the cognitive and academic realms are not ignored, first priority should be given to the child's healthy emotional growth.

Examples of each goal orientation are not found at each level of classroom process. By definition, the amplification level of structural/procedural change maintains many of the characteristics of traditional schools. Both goals and instructional strategies remain essentially unchanged, but are intensified. Thus, most projects which "amplify traditional services" have academic goals. In contrast, the reorganization level of the structural/procedural change dimension encompasses projects with academic, cognitive, or adjustment goals.

Dimension 3: Organizational Changes

The third dimension categorizes various types of organizational change. Organizational changes do not necessarily imply a change in classroom process, although they may have implications for the classroom. Instead, they are changes in the organization of the educational system; they are changes in the way education is delivered to students. Parent-mediated educational projects, busing, performance contracting, and vouchers are examples of organizational change. Clearly it is possible, and indeed common, for no such change to be present in a project.

In the case of parent-mediated educational projects, goal orientation could conceivably be academic, cognitive, or adjustment. Similarly, performance contracts could be undertaken for any of the three goals. Most performance contractors to date, however, have been academically oriented and have used carefully defined objectives and individualized sequenced instructional strategies. When children are bused from one school to another, the goals and processes of the classrooms they enter typically remain the same. On the other hand, voucher systems could involve either no change or extensive changes in classroom goals and procedures.

In the following pages exemplary and successful projects will be discussed. The project descriptions will be arranged by levels in the "classroom process" dimension and, within them to some extent, by goal orientation. Several subcategories of "reorganization of classroom process" will be used. Finally we shall describe projects that emphasize organizational change, whatever their goal and process features. A brief review of evaluations of Follow Through and Title I is provided after the discussions of individual projects.

Dimension 1: Amplification of Traditional Classroom Services

Projects categorized within this level of Dimension 1 attempt to improve the quality of classroom instruction by intensifying the types of services traditionally provided. Emphasis on smaller classes and the addition of resources (e.g., books, audiovisual materials) are characteristic.

In a review of the effects of Title I projects, the Center for Educational Policy Research used the term "general enrichment" to describe the projects in an equivalent category. CEPR noted the following main characteristics of general enrichment projects:

1. Multiple program objectives reflecting attention to the development of the "whole" child--e.g., cognitive, affective, and physical objectives.

2. Program content based on a general inventory of student grades level needs, rather than on individual diagnosis and prescription.

3. The academic content often merely an extension of typical classroom methodologies. (1971, p. 25)

Enrichment projects also typically employ classroom teachers rather than specialists for remedial work.

Of approximately 670 evaluation reports, CEPR found that 90% were general enrichment in nature. Very few projects of this type are reported in reviews of successful projects, however. In the following few pages, we shall briefly describe the few such projects which have been termed successful on the basis of test results.

After School Study Centers (Wargo et al., 1971)

One method of intensifying traditional school services was the establishment of After School Study Centers (ASSC) in 1964; while offering services ranging from music and art education to homework assistance, the primary focus of the centers has been to provide individualized remedial instruction in reading and arithmetic. Children in Grades 2 through 6 who have demonstrated 1 or more years of retardation in these areas are eligible for voluntary attendance at the centers.

Half of the 350 teachers in the centers (1966-67) were active in the remedial reading program, which has become the primary focus of the centers. The teaching load consisted of fifteen children who met three times a week with the teacher. Teachers were given flexibility in adopting a remedial instruction strategy suitable to each child's needs.

The variety of activities in the centers included story-telling, reading, word games, choral reading, dramatization, creative writing, and discussions. SRA reading labs provided the major source material in reading instruction; this method allowed for individually paced progress in problem areas.

Evaluation of the project was based on pre- and posttest reading achievement scores on the Metropolitan Reading Test (MRT) in 1964-65 and 1966-67. In the earlier study pre-test scores were used to obtain a matched sample of fourth Grade ASSC students with peers in the same school who were not a part of ASSC. Results indicate that the two groups differed significantly: while the ASSC children gained one year in reading achievement (parelleling gains usually made by "average" children over the course of one year), the control children were two months below the norm. In '66-'67 only ASSC children were tested in reading achievement in a pre- and posttest design in October and April. Normative gains of

.7 for this time period were attained by fourth and sixth grade children. Children in Grades 2, 3, and 5 had gains greater than .7 in reading grade-equivalent. Wargo et al. (1971) claim that all ASSC students showed statistically significant gains (i.e., one month gain for one month instruction) when compared to projected norms for the "disadvantaged" school population. However, they term the program "marginally successful" since overall performance at national norm levels is the desired goal.

More Effective Schools (Wargo et al., 1971)

Perhaps the best exemplar of this level is the More Effective Schools project, instituted in NYC in 1965 to improve the quality of a traditional program without major curriculum modifications. Stress was primarily placed on size of classes and within-class groups, instructional services, and innovative methods.

Reduction in the teacher-student ratio was achieved by maximum quotas on class size (15 for prekindergarten through first Grade, 20 for second Grade, and 22 for third through sixth Grades). While classes were heterogeneous with respect to abilities and interests, homogeneous small groups were established for levels of achievement in specific content areas and for special needs. Individualized instruction (especially remedial, tutorial, and enrichment) was encouraged as well as the innovative deployment of different methods (e.g., team teaching). In addition instruction was available after school to prekindergartens (half day).

The classroom arrangement often contained interest centers where children could work in small groups under adult supervision. Language and communication skills were heavily stressed at all levels with particular attention given to reading skills.

Research findings from five pre-posttest evaluations of MES projects indicate that the projects have produced only small, inconsistent gains. The first evaluation, showing no gains, was confounded by student attrition. A second study (October '66-April '68) indicated statistically significant gains by MES children as compared with controls on the Metropolitan Reading Test (four of six MES groups surpassed the normative month-for-month expected gains on the MRT). A comprehensive study (1968-69) of third and fifth graders in MES and control schools revealed that MES gains over controls in third grade on Metropolitan achievement tests had disappeared by Grade 5 and monthly grade-equivalent gains had fallen below normative expectations. Similar loss of gains from Grades 3 to 5 on the MRT occurred for MES students. In a comparison of 2-year gains from Grades 5 to 7, the initial significant advantage of MES pupils dropped to an insignificant one, while gains were less than month for month expectations. Hence, the data suggest that MES programs result in small performance gains in comparison to the disadvantaged norm but do not consistently meet national norms.

Plus (Wargo et al., 1971)

The Plus program offers elementary schools additional resources in four specific domains: remedial reading, remedial mathematics, field trips, and pupil personnel services. There is a heavy emphasis on diagnosis and remediation of the individual child's problems through both small group sessions with remediation specialists and a variety of specialized equipment and materials. Children who are one or more years behind their grade levels in either of the remedial areas are referred by school principals, classroom teachers, or special reading or math teachers to small group sessions outside of the regular classroom which meet daily (30-45 min.), In addition to their work with the children, the remediation specialists help teachers diagnose problems, and make suggestions for improvement in regular reading and mathematics programming. The increased equipment made available to the small groups include filmstrips, special texts, teaching games, and tape recorders.

Field trips, geared to each age level, were introduced in an effort to stimulate the child's interest in his community through broadened experiences. Approximately four trips are taken annually which relate to the classroom curriculum itself, and are designed to complement the instructional program. Parents are also invited to accompany their children on many of the trips.

Pupil personnel services expand the existing school services by offering social work services and psychological guidance to the students. It is viewed as an aid to both staff and parents in helping meet the needs of students.

Evaluation of the project employed two methods: gain scores on the California Reading and Arithmetic Tests, and a teacher questionnaire. In 1966-67 a representative sample of the students revealed a rate of gain of 1.2 in reading and of 1.0 in math. A similar testing in 1967-68 resulted in gains greater than monthly normative expectations for Grades 3-6 in reading and for Grades 2-6 and 8 in mathematics. This indicates that the program is effective, especially in Grades 3-6, although evidence for maintenance of these gains is limited. The teacher questionnaire was employed in 1968-69 as the instrument of evaluation; almost 100% of the teachers rated project effectiveness, parent and student interest, and student improvement as good or excellent.

Homework Helper Program (Wargo et al., 1971)

The Homework Helper Program began in 1963 under the auspices of Mobilization for Youth, Inc. In this project paid tutors from the tenth, eleventh, and twelfth grades meet with children in Grades 3-6 for two hours one or two afternoons a week to help the elementary school children with their homework and to tutor them in reading. The elementary school participants are selected by their teachers on the basis of their retardation in reading.

The tutoring takes place in a center located in the elementary schools; each center is staffed by a regularly licensed master teacher. The master teacher trains the tutors and serves as the primary link between the tutors and their pupils' classroom teachers. Tutors are given a manual which includes information on tutoring, examples, and instructions on use of materials and equipment.

Tutors meet with one pupil per day. The session begins with refreshments followed by a 40-minute period during which the tutor helps the pupil with homework. The second 30 or 40 minutes are devoted to reading, and the third segment of about 20 minutes is spent in a creative activity such as writing, making puppets or models, etc. The remainder of the two hours is spent in "recreation", typically with an educational game.

In 1963-64 the project involved 110 tutors and 330 pupils. The New York Tests of Growth in Reading were administered to the pupils as pre- and posttests. In a 5-month period the group of pupils who were tutored for 4 hours per week gained significantly more (6 months gain) than the control group (3 1/2 months gain). A group of pupils tutored 2 hours per week gained 5 months, but this gain was not significantly different from that of the control group. The tutored pupils' attitudes and aspirations, assessed by a questionnaire, did not change over the 5-month period.

Gains made by the tutors during 7 months were dramatic, with their gains on the Iowa Silent Reading Test more than twice those of the control group.

No evaluations have been conducted since 1963-64, but the project has expanded. During the 1969-70 school year, 154 Homework Helper Centers were in operation in New York City.

Summary: Amplification of Traditional Classroom Services

These four projects, while used as examples of amplification of traditional classroom services, also have some components of more structured projects. In the After School Study Centers, every teacher had the SRA reading laboratory available although teachers were allowed to use whatever instructional techniques they chose. No information is provided, however, on what curriculum materials were most frequently used by the teachers. More Effective Schools and the Plus Program attempted

TABLE 7.2
AMPLIFICATION of TRADITIONAL CLASSROOM SERVICES
ACADEMIC GOAL ORIENTATION

Project	Year of Inia-tion	Rep-li-ca-tions	N	Grades	Student-Teacher Ratio	Time	Main Features	Parent Involve-ment	Design	Tests	Results	Approx-imate Costs
After School Study Centers (all subjects evaluation on reading) New York	66	30- no data	1967: 30000	2 - 6	V	2 hours V days; sy	After school reading help using SRA reading labs		Pre-post, no controls (1964) no controls (1966)	Metro-politan Reading Test	Rate of gain 1.0 (1964) Rate of gain better than 1.0 for grades 2,3,5 (1966)	$70
More Effective Schools New York	65	5 no data	16600	pK - 6	15:1 (pK-1) 20:1 (2) 22:1 (3-6)	sd 5 days sy	Teacher training, improve student-teacher ratios innovative techniques, after-school study centers	Some involvement in various capacities	Pre-post Controls	Metro-politan Reading Test Metro-politan Achieve-ment	1966-68 Experimental improved more than control, with rate of gain slightly exceeding 1.0 1968-69 Slight advantage at Grade 7 had disappeared by Grade 5; less than 1.0 rate of gain over 4 year period In sum, performance is better somewhat than disadvantaged norm, but doesn't meet national norm	$920

TABLE 7.2 (Continued)

Project	Year of Inia-tion	Rep-li-ca-tions	N	Grades	Student-Teacher Ratio	Time	Main Features	Parent Involvement	Design	Tests	Results	Approx-imate Costs
Plus Program New York	66		1967: 6700 1968: 7436	1 - 8 1 - 8	5:1	1/2-3/4 hours 5 days sy	Diagnosis and remediation in math and reading, child + materials-centered approach; field trips; pupil personnel services	Parent-teacher conferences at beginning and end of school year; parents invited to visit	Pre-post	California Reading Test California Arithmetic Test Questionnaires	1966-67 Rate of gain 1.2 in reading, 1.0 in math 1967-68 Grade 3, not 1 and 2, had rate of gain better than 1.0 in reading, Grades 2 and 3 in math 1968-69 Teachers rated program, parent and student interest, and student improvement as good or excellent	$230
Homework Helper New York	63		1964: 330 1968: 2000	3 - 6	1:1	2-4 hrs per week sy	Older children help younger children--1 old : 3 young		Pre-post, matched control	New York Test of Growth in Reading	1963-64 Experimental group receiving 4 hours of tutoring/week, but not those receiving 2 hours/week, made greater gains than controls	$460 (63-64

a number of changes. For example, the Plus Program focused on individual diagnosis for remediation in math and English, while at the same time emphasized field trips and new materials. We cannot be sure which components resulted in initial improvements in performance. Individual tutoring and individual help on homework was an integral component of the Homework Helper project.

The striking aspect of this type of project is the relatively small number of successes for such a large number of projects. CEPR's review found that "general enrichment" projects were rarely successful in meeting their objectives, and the three projects we have described are the only ones which have been identified by the AIR surveys.

Dimension 1: Reorganization of Classroom Process

All projects categorized at this level effect some change in classroom process, but the nature of the changes are quite diverse. Some of the changes affect only a portion of the school day; others may alter all of it. Classroom reorganization will be discussed under five main subcategories; and, where possible, they shall be further subdivided by goal orientation. The five subcategories are (1) the implementation of new curricula in specific content areas, (2) instructional television, (3) computer-assisted instruction, (4) behavior modification, and (5) overall classroom reorganization.

Implementation of New Curricula in Specific Content Area

These projects have implemented new instructional strategies in specific content areas to increase student achievement. The content areas most frequently involved are reading and language, and the amount of time typically devoted to the curriculum ranges from one-half to two hours a day. The curriculum may be implemented with a small group of students who have more serious difficulties and who leave the classroom or attend special sessions after school to use the special curriculum. The remainder of the school day is spent in the typical manner.

These curricula differ a great deal in their instructional strategies. Some use highly-trained specialists while others use paraprofessionals. Some use one highly structured written curriculum (e.g., the Peabody Language Development Kit), while others use a variety of curriculum materials. Some take place in specialized clinics; others in small groups within the classroom. Most of the reading projects presented here are similar, however, in their emphasis on diagnosis of the individual child's problems and individual or small group instruction directed specifically toward those problems.

Programmed Tutorial Reading Project (Wargo et al., 1971). The Programmed Tutorial Reading Project includes the use of highly structured materials and nonprofessional tutors for individualized daily reading instruction for first graders. The nonprofessional tutors, whose age and experience differs greatly,are trained to use instructional modules (rote-memory basis) and to react in specific ways to the child's responses. While error-free reading is the desired goal, tutors are instructed not to pursue this end at the expense of the child's self-confidence. Hence, after repeated attention to troublesome areas, new material is introduced in a prescribed manner, despite lack of mastery of some problems. The lessons are graduated in difficulty, ranging from basic sight-reading to comprehension and word analysis skills. Daily recordings of a student's progress, plus the prescribed instructional sequence, facilitate employment of different tutors with the same child.

The data from the evaluation of the project (1968-69) were confounded by suspected irregularities in assignment of children to experimental and control groups as well as deviations from design requirements (tutoring less than one year, control groups receiving a different tutoring program, etc.). In addition, posttests were nonstandardized Ginn Pre-Primer, Primer, and First Reader Achievement Tests. When the first two tests were used, statistically significant differences favoring the model over controls were found for the seven schools which met all the requirements of the experimental design, for the five schools who deviated in allocation of students to groups (which favored the control group), for the two schools in which the project was in effect less than one year, and for the one school in which the model was being used for the second year. These statistically significant advantages for the model were maintained only for the first seven schools and the last school mentioned above when all three reading scores were used together. In addition, the project seemed most effective in the largest school systems. Since these systems have larger proportions of disadvantaged children, this finding implies that the project is most successful with disadvantaged groups.

Alpha One Reading Program (Wargo et al., 1971). Alpha One is a one-year language arts project. Its stated objectives are to (1) develop competence in listening, spelling, writing, and reading skills, and (2) develop and strengthen the child's self-esteem through his achievement in the language skills area. There are clearly defined instructional modules, each of which includes specific objectives. The first of these stresses individual letters in the alphabet. Following this, specific decoding and spelling skills are emphasized. The third module focuses on decoding polysyllabic words.

Game-like phonics are used to interest the child and to encourage him to use his imagination while learning to read and spell. The highly structured lessons are designed to be "fun". The child acquaints himself with the 26 Letter People (who have certain characteristic habits when alone or with others) and he gets involved in other rhymes, stories, games and humorous experiences which comprise the reading kit. No specific reading text is associated with the kit since children are encouraged to try to read whatever interests them. Individualized instruction is part of this program as are the weekly tests which serve to monitor the child's progress. No inservice training is necessary; the Alpha One Professional Guide gives the teacher additional suggestions for activities associated with each lesson plan (usually 40 minutes per period and up to 3 periods per day).

The evaluation of Alpha One commenced in 1969, in an effort to compare its effectiveness with that of the Stern Structural Reading Program. Two classes in a school were randomly selected prior to introduction of Alpha One in one of the classes. The other class used the Stern Method and also had a paraprofessional aide. Results from the Sentence Reading and Word Recognition Subtests of the Gates Primary Reading Test indicate that Alpha One students performed significantly better than their controls, even though both groups gained more than usual (approximated or exceeded normative grade-equivalent gains) for that school during the year. When some of the Alpha One children were tested the following year (a representative sample who were no longer using the materials), results showed the rate of reading achievement growth surpassed expected grade-equivalents for non-disadvantaged children. In fact, in the middle of second Grade, these former Alpha One children were reading at the fourth-grade level.

Speech and Language Development Program (Wargo et al., 1971). The Speech and Language Development project, initiated in 1966, provides language skill training to disadvantaged children who have oral language deficiencies. The project originally served only Grades 1 and 2, but in 1969-7 included Grade 3. Speech therapists provide speech and oral language skills training to small groups of 6 to 8 children for 45 minutes per day, 4 days a week for 15 weeks. The goal of the project is to increase verbal and conceptual ability, and thus we have categorized the project as cognitively-oriented. Chief activities during the sessions are talking, listening, and manipulating, and the activities are arranged in specific lesson plans which provide suggestions for instruction. Books, charts, records, filmstrips, language masters, and the Peabody Language Development Kit are used during the sessions.

Annual evaluations of this project have been conducted since 1966. In spring, 1966, project children gained more, but not significantly more, than control children on the Ammons Quick Test of Verbal-Perceptual Intelligence. In 1966-67 the gains were statistically significant during the fall semester, but again did not reach significance during the spring semester. In 1967-68, no differences were found between project children and controls on the Ammons Quick Test, attendance, or teacher ratings. And in 1968-69 project and comparison children did not perform differently on the Illinois Test of Psycholinguistic Abilities. The Peabody Picture Vocabulary Test and the Milwaukee Public Schools Language Development Scale were used for evaluation in 1969-70. Kindergarten children made larger gains on the Peabody than other disadvantaged pupils not eligible for the project (i.e., children ranking in the upper 15% in oral language ability), although the difference between the groups was not statistically

TABLE 7.3
IMPLEMENTATION of NEW CURRICULA in SPECIFIC CONTENT AREAS
ACADEMIC GOAL ORIENTATION

roject	Year of Inia-tion	Rep-li-ca-tions	N	Grades	Student-Teacher Ratio	Time	Main Features	Parent Involve-ment	Design	Tests	Results	Approx-imate Costs
lpha ne eading rogram ork argo t al., 971)	69		27	1	27:1	2 hr/ 5 day sy	Instructional modules with specific objectives; individual instruction and weekly tests; focus on self-esteem		Posttest control group used Stern Structural Reading Program and had half-time aide	Gates Primary Reading Test	1969-70 Alpha One scored better than control group on Sentence Reading and Word Recognition Subtests; Grade-equivalent scores were 2.68 and 2.95 for the subtests; the control group also scored high than normal (1.94 and 2.38)	
										Gray Oral Reading Test	Jan.'71 (n=11) Alpha One childrer's mean grade-equivalent score was 4.14, with no use of Alpha Materials during Grade 2	

TABLE 7.3 (Continued)

roject	Year of Inia-tion	Rep-li-ca-tions	N	Grades	Student-Teacher Ratio	Time	Main Features	Parent Involvement	Design	Tests	Results	Approx-imate Costs
ugment- d Read- rg Pro- ect alifor- ia (Margo t al, 971)	66		1967: 1385 1968: 1230	1-3, then k-6 in '68	3:1	4-6 mos.	Remedial instruction by aides, teachers, or specialists on basis of diagnostic test	Community activation component providing study sessions & conferences for parents and staff	Pre-post	Wide-Range Achievement test	1966-67 Rate of gain 1.5 in reading 1967-68 Rate of gain 1.1 in reading	
									Middle-class control	Stanford Reading Achievement	1968-69 Grade 1 & 3 experimental scored higher than control; no difference between Grade 2 experimental and control	
										Cooperative Primary Wide Range Ach.	1969-70 Grade 1 fell .4-.7 grade units below norm on COOP	
ommun- cation ills nter roject ichigan argo t al, 971)	66		2845	2-12	8:1	2hr/week sy	Diagnosis, remedial instruction in small groups, counseling		Pre-post	California Reading Test	1966-67 Results not reported for Grade 3; for Grades 4-6 program did not appear successful	$260
										Gates-MacGintie Reading	1967-68: Rate of gain lower than 1.0	

TABLE 7.3 (Continued)

roject	Year of Inia-tion	Rep-li-ca-tions	N	Grades	Student-Teacher Ratio	Time	Main Features	Parent Involve-ment	Design	Tests	Results	Approx-imate Costs
nguage velop- nt ogram scon- n (CEPR, 971)			928	K-2	6:1	1 hr 5 days 1/2 sy	Diagnosis, oral language training by language therapists		Pre-post control	Milwaukee Public Schools Language Development	1969-70: Experimental children performed better than controls	
nguage timula- ion rogram labama argo t al., 971)	64	1-no data	32	1	8:1	1 hr 4 days 10 wks	Peabody Language Development Kit with structured daily lessons		Pre-post with followup at 20 and 34 mos.; control	Stanford-Binet ITPA Lee-Clark California Reading Test	On Stanford-Binet and ITPA experimental scored better than controls at all testings No difference immediately, but experimental scored higher than controls at 20 & 34 month follow-ups; still below grade level however	
istrict 1 earning nter Project Minn. argo t al., 971)	67		252	2-4	3:1	1 1/2 hr 4 days sy	Teacher referral to clinic diagnosis, individually prescribed instruction	home visit during diagnosis	Pre-post		Over 4 years, 30% full success (i.e. children returned to and remain in classrooms) Average rate of gain of 1.5-2.0	$1000

TABLE 7.3 (Continued)

Project	Year of Iniation	Replications	N	Grades	Student-Teacher Ratio	Time	Main Features	Parent Involvement	Design	Tests	Results	Approximate Costs
Malabar Reading Program California (Wargo et al., 1971)	64			pk-3	1:1 small group		Language emphasis for Mexican-Americans within classroom	Volunteers	1966-67 scores of nontreatment children provided baseline	Stanford Achievement	1966-69; Reading achievement on SAT improved for Grades 1-3 1969-70: No evaluation	
Programmed Tutorial Reading Project Indiana (Wargo et al., 1971)	65		1966: 86 1967: 800 1968: 1200	1 1 1	1:1	1/2 hr 5 days sy	Nonprofessional tutors provide highly structured instruction; daily records of student progress		1965-66 Data Pre-post a) control b) directed tutoring--more traditional individual instruction	Ginn Metropolitan Readiness (pre (post) Ginn Achievement Tests	1965-66: Programmed tutoring group scored higher than controls and directed tutoring group; 1968-69: Programmed tutorial groups scored higher than controls; Most effective with largest school systems (i.e., the more disadvantaged children)	

TABLE 7.3 (Continued)

Project	Year of Inia-tion	Rep-li-ca-tions	N	Grades	Student-Teacher Ratio	Time	Main Features	Parent Involve-ment	Design	Tests	Results	Approx-imate Costs
Project Mars Massa-chusetts (Margo et al., 1971)	66		212	1-4	6:1	3/4 hr 5 days 7 mos	Individual diagnosis and instruction in small groups	Advisory panel conferences	Pre-post	Metro-politan Achieve-ment Tests -Reading -Word knowledge	1968-69: Grade 1 children scored 1 mo. above grade level on the Reading and Word Knowledge subtests, Grade 2 children had a rate of gain greater than 1.0, and Grade 3 approached 1.0 in Reading and exceeded 1.0 in Word Knowledge 1969-70: In general, Grades 2 and 3 had a rate of gain greater than 1.0; No scores were available for Grade 1.	
Project Conquest Illinois (Margo et al., 1971)	65		1089	1-6	6:1	3/4 hr 4 days 7 1/2 mos.	Individual diagnosis & prescriptive remedial instruction (clinics for g4-6)	Consultations observations, at reading classes, home visits	Pre-post	Gates Reading Survey Gates MacGinitie	1968-69: For all grades, overall rate of gain was 1.2 1969-70: (Differences between reading rooms were analyzed and all made comparable gains) Grades 1 & 2 had rate of gain slightly over 1.0; Grade 3 had rate of 1.5	

TABLE 7.3 (Continued)

Project	Year of Inia-tion	Rep-li-ca-tions	N	Grades	Student-Teacher Ratio	Time	Main Features	Parent Involve-ment	Design	Tests	Results	Approx-imate Costs
Reading Improve-ment Project hio (HEW, 1972)	71		1838	1-3	v	5 days sy	Reading con-sultant; in-div. and small group instruc-tion		Posttest Control	Gates-MacGin-itie	Experimental scored high-er than controls in vocab. & comprehension with Grade 3 benefit-ting most	$320
Remedial Reading Program ew Mexico (NCEC, 1971)	65		83	2-6	4:1	1/2 hr 5 days sy	Indiv. & small group reme-dial reading, with indiv. diagnosis and prescription		Pre-post	Gilmore Oral Reading	1969-70: Rate of gain greater than 1.0 (except in Grade 4)	$300
Self-Direc-tive Dramati-zation Illinois (Wargo et al., 1971)	64	4-no data	107	1-4	25:1	3-5hr/wk 7 mos.	Self-selected dramatic reading		Pre-post Control	Gray-Votaw-Rogers Achieve-ment Test--Reading	1964-65: Experimental made greater gains than control group, and had a rate greater than 1.0	$70 excl.
										Spelling Arithme-tic	Grade 2 children also scored higher than con-trols and gained great-er than 1.0 on spelling and arithmetic subtests	

(Continued)

TABLE 7.3 (Continued)

Project	Year of Iniation	Replications	N	Grades	Student-Teacher Ratio	Time	Main Features	Parent Involvement	Design	Tests	Results	Approximate Costs
Self-Directive Dramatization Illinois (Wargo et al., 1971)										Self-Concept checklist	Favorable changes--70% decrease in number of questions checked that indicated negative behavior	
CESA #8 Program Wisconsin (Wargo et al., 1971)	68		150	K-2	5:1	1 hr . 5 days sy	Engelman-Beckar program (reading, language, arithmetic) for teacher referrals		Pre-post	ITPA WISC WRAT	1969-70: Grade 2 made significant gains on ITPA and WRAT and gained 5.84 points on WISC (no control)	$500
									Control of non-project students	Grades	1970-71: At end of first semester 65% of project pupils received grades as high or higher than controls	

TABLE 7.3 (Continued)
COGNITIVE GOAL ORIENTATION

Project	Year of Inia-tion	Repli-cations	N	Grades	Student-Teacher Ratio	Time	Main Features	Parent Involve-ment	Design	Tests	Results	Approx-imate Costs
chools or the uture/ S 133 ew York lso A Center or Ur-an Ed.; 970)	68		1969: 275 1970: 508	1-3 K-5	25:1	1-2 hrs 5 days sy	Gattegno math & language materials "in color"	workshops, some aides	Posttest Norms of city and district (district norms lower than city norms)	Metro-politan Achieve-ment Test	1968-69: Grade 1 not tested, Statistical Tests not used but Grade 2 improved slightly matching the city mean in reading, while Grade 3 narrowed the gap from .8 to .1 grade equiv. score below city mean in reading. In math Grade 3 (2 not tested) improved relative to previous year, but still lagged behind city mean One year later: (children in program 2 years now) Grade 2 & 3 were .7 grade equivalent units above citywide mean in reading	
peech & angu-ge Dev. rogram iscon-in Wargo t al., 971)	66		273	1-3	7:1	3/4 hr 4 days 15 wks.	Speech thera-pists, small groups; focus on talking, listening and manipulating		Pre-post Matched control	Ammons Quick Test of Verbal Percep-tual Intelli-gence ITPA	1966-67: Experimental gained more than control on Ammons 1967-69: No significant difference between exp. and control on Ammons (1967-68) or ITPA (1968-69)	$200+

significant. During the fall semester of 1969-70, this project was compared to two other language development projects--Bereiter-Engelmann and a "manipulative" approach. The children in all groups (who had been randomly assigned) made significant gains and scored similarly on the Ammons Quick Test and the Milwaukee Scale. These data do not indicate that the project is consistently successful in improving performance on standardized tests.

Summary: Implementation of new curricula. This sub-category encompasses a relatively large number of successful projects. Disadvantaged children participating in the projects generally perform better than disadvantaged controls or make gains larger than month for month. Wargo et al. (1971) consider gains to be "educationally significant" if they are as large as those expected for "average" children during a comparable period of classroom instruction, i.e., one month gain on achievement test score for one month of classroom instruction. Although most produce gains sufficient to be termed educationally significant, few projects enable children to meet "average" grade level expectations. In addition, the long term effects of most of these projects are unknown because longitudinal evaluations have rarely been conducted. Exceptions include the Alpha One Reading Program (8 month follow-up), the Language Stimulation Program (20 and 34 month follow-up), the Learning Center Program (which reports the number of "returnees" to the clinic), Cesa #8 (8 month follow-up), and Schools for the Future (1 year). These projects, however, do not always present follow-up performance on the same instruments used to test for original effectiveness, and only one project (Language Stimulation) follows children for longer than one year. In general, some positive gains appear to be maintained for one year.

With regard to the ability of a project to continue producing gains with new incoming classes, Wargo et al. judged the Speech and Language Development project, the Augmented Reading project, and the Communication Skills Center to be "no longer successful", while the Language Stimulation and the Programmed Tutorial Reading projects were still judged successful on the basis of data collected since their 1969 review.

Instructional Television

Instructional television (ITV) is generally used to implement academic goals, but some shows (especially those targeted to younger children) carry adjustment-oriented messages. Specific new curriculum areas and reading have most often been taught. Patterns in Arithmetic, a modern mathematics course developed for grades 1-6 by the University of Wisconsin Research and Development Center for Cognitive Learning, is an example of one approach to ITV (Braswell and Romberg, 1969). Another, Model Educational Programs in Ecology, a Title III project, uses television to reach about 50,000 elementary and secondary school students with environmental education programs (see Inner City Fund, 1971b). A third is The Electric Company, Children's Television Workshop's reading program for primary-age children. The first two projects began in 1970-71, and no data are available yet on their efficacy. The third project began in October, 1971.

Evaluators of The Electric Company indicate that, six weeks into the broadcast season, the in-school viewing audience was 2 million pupils in 18,000 schools. Educational Testing Service is evaluating pupil learning based on a study of 11,000 children, half of whom are viewers and half non-viewers. The results of this study will be available in September, 1972 (Horner and Fowles, 1972).

Evaluative data on educational television programs funded by the Office of Education are very difficult to find and generally inconclusive. The apparently high interest of elementary school children in television (Humphrey, 1967) cannot be verified in terms of the numbers of ITV projects focused on children in grades 1-3. Most are directed to older groups of students, while others lack specificity, as they reach the general public outside school hours. Two comprehensive reviews of instructional television have been written -- one by Asheim et al. (1962) which reviews 393 studies of educational TV, and one by Chu and Schramm (1968). These studies reported that: 1) ITV is more effective in the early grades than in high school; 2) elementary teachers like and depend on ITV more than other teachers; and 3) elementary school children like ITV more than high school or college students.

It is not clear how many educational television projects have been supported by OE in recent years, nor is it clear how much money has been allocated to them. The most recent estimates (Inner City Fund, 1971b) indicate that between 1965-1966 and 1969-1970 OE directly supported about 200 projects, over half of which were in Title III, ESEA, at an approximate cost of $25 million. In 1970-71, OE directly supported 16 educational television projects at a cost of about $10 million; about $30 million, the same amount as for the current year, was administered by states.

The evidence indicates that educational television has not realized what potential educators have written about for two decades.

First, it may not be as popular as it is often said to be. A study in St. Louis (St. Louis Public Schools, 1970) evaluating the public school use of ITV, found that the average number of program guides ordered was nearly seven times greater than the average number of teachers who reported watching programs, and was fourteen times the number of programs actually watched by teachers in an on-site survey. Of the teachers who reported using television instruction in the classroom, less than 50% were actually doing so when checked by on-site surveying teams. In 1969, when the Delaware legislature cut off appropriations for the state's closed-circuit television (CCTV) system, the State Department of Public Instruction attempted to lobby for reversal of that decision through a careful evaluation measuring use and effectiveness of programs. Only 62% of Delaware teachers responded to the questionnaires; 80% of all school personnel who responded said they could get along without television instruction (Mohrmann and Wise, 1970). Another study (Benton et al., 1967) indicates that availability of ITV programming may limit use to less than 3% of instructional time in urban areas (see Table 7.4).

TABLE 7.4

Percentage of Total School Hours For Which Instructional Television is Available (K-12)

Baltimore	.67%
Boston	1.19%
Buffalo	1.94%
Chicago	3.03%
Cleveland	2.26%
Detroit	10.00%
Los Angeles	1.83%
Memphis	3.08%
Milwaukee	1.83%
New York	2.02%
Philadelphia	4.29%
Pittsburgh	2.34%
San Diego	2.31%
San Francisco	2.41%
St. Louis	2.86%
Washington, D.C.	-----
AVERAGE (excluding Washington)	2.80%

(Taken from Benton et al., 1967)

Second, it is not clear whether the "growth" in ITV enrollments is due to its usage by more students or to its multiple usage by the same students as more courses become available (DuMolin, 1971; Tickton, 1970).

Third, there are indications that truly effective ITV courses cost considerably more than the $1,000 - $2,000 often spent per program hour today. Commercial programming, much of which competes with ITV, costs about $80,000 per program hour; Sesame Street, the most successful and widespread ITV effort to date, costs $40,000 per program hour.

This last point is not particularly discouraging, however. The Electric Company, the primary school successor to Sesame Street which focuses on reading, reaches two million children; the cost of programming is two cents per program hour per child. The capital involved in reception equipment adds to this figure of course. The thrust of the argument is to centralize programming efforts and produce high quality ITV that will complement classroom instruction.

Substantial replacement of classroom functions with high-quality ITV would entail a much larger production in order to best meet the needs of varied schools and children, and the cost would rise accordingly. According to some models, the cost for one grade 1 - 6 curriculum covering 1/3 of the day, 3 ability tracks, and 2 approaches would cost $472 million over a four-year period (based on DuMolin, 1971).

In sum, ITV appears promising as a complement to present traditional and experimental classroom methods, but has not demonstrated itself to be a feasible replacement for them.

Patterns in Arithmetic (Wisconsin Research and Development Center for Cognitive Learning, n.d.). Since 1966, Patterns in Arithmetic (PIA) has used a weekly instructional television (or videotape) format to present modern mathematics lessons in an informal and visually entertaining manner to children in Grades 1-6. PIA represents one part of the IGE system whose overall goal is to design materials adapted to the individual's rate and style of learning. Learning principles (e.g., mathematical abstractions are best derived from observations of concrete objects or actions) are utilized to teach concepts and computational skills throughout the 336 televised lessons, which are supplemented by a teacher's manual and student workbooks. The ideas focused on in the series include sets, number, numeration systems, operation, mathematical sentences, measurement, geometry number theory, and practical aspects. Each 15 minute lesson is sequenced (in an order often different from traditional methods) and spirally organized. No more than two consecutive weeks are spent on any one idea or skill, which often implies incomplete mastery of the skill. However, PIA prefers to spiral and reinforce the skill throughout the year rather than induce long periods of drill. Materials for Grades 1, 2, and 3 can be introduced independently, although those for older children require previous background with PIA. PIA developers also view their project as a vehicle for training teachers to teach New Math.

In 1966-67, large scale field tests with first and third graders were undertaken. Teacher and pupil inventories were employed in conjunction with two standardized achievement tests (one of which was specifically designed by ETS to evaluate concept attainment). PIA developers report that almost 70% of the PIA first graders scored above the 50th percentile when compared with norm groups; PIA third graders also showed improvement on one computation test (from 18% to 54% scoring above the 50th percentile after 1 year of PIA). The opinion inventories indicated the programs were well liked by both teachers and students, although they seemed most appropriate for the middle or high ability child. There were no significant differences across four community sizes, but there were regional effects and trends favoring the middle or high SES groups. Annual evaluations, focusing on different grade levels, indicate that PIA students do as well as or better than norms on standardized tests. Presently PIA is experimenting with nonbroadcast versions of the lessons, while expanding the number of sites serviced.

Summary, ITV. The final reports of many projects have not yet been catalogued and disseminated by ERIC and Pacesetters in Education. The catalog of ongoing projects, Current Project Information, does not contain the kind of data needed. Unfortunately, reports from non-current projects are in storage in warehouses in the Washington area. Furthermore, the Inner City Fund (1971) reported that data are inconsistent from year to year and occasionally unavailable. Their report to Libraries and the Bureau of Educational Technology estimated that three-quarters of the current instructional TV funds (about $30 million)are allocated to states and local education agencies which supply no information about the projects they support.

Averch et al. (1971) note that, at present, ITV seems to be as effective as conventional classroom techniques of instruction, but no more effective.

> . . . after hundreds of studies, it can only be concluded that learning by television is about as effective as conventional classroom learning, and a case cannot be made for the superiority of either. Effective television teaching grows out of the application of sound teaching methods, such as simplicity, organization of material, and practice, and apparently not from any special mode of presentation. The advantages of television learning are not evident in any identifiably superior result, but rather in the ability to reach a larger audience and to augment conventional methods. (p. 67)

Anderson and Greenberg (1972) agree, "the generalization that TV and face-to-face instruction, under carefully controlled conditions, yield no differences in learning has been amply documented." (p. 13)

Computer-Assisted Instruction

Computer-assisted instruction (CAI) is categorized here as a reorganization of classroom process. CAI involves the interaction of students with computers in, typically, an individualized learning situation which is highly structured. Computers have a relatively short history, and their use for instructional purposes has an even shorter history. Molnar (1972) notes that the first systematic research in CAI began around 1965. Around this time also, some schools began investigating the use of computers in compensatory education through funds received under ESEA. By 1968 over 155 computer-related projects had been initiated (Molnar and Sherman, 1969). In addition, 25 regional computer networks were established over the past 3 years to distribute and test the use of CAI.

Molnar (1972) has listed a number of ways computers can be used in instruction:

1. Drill and practice--enables student to develop a skill or knowledge under controlled learning conditions, and then to practice the skill under a wide variety of learning situations;
2. Tutorial--presents a series of factual statements or information, and the student carries on a conversational question-and-answer dialogue with the computer;
3. Inquiry systems--provides learner-controlled responsive learning system (obviously the computer is responsive only within certain limits);
4. Laboratory--simulates experimentation;
5. Simulation--models the real world in replica or analogue;
6. Problem-solving--teaches problem-solving skills;
7. Computer-managed instruction (CMI)--student records are stored in computer; student takes a test indicating his progress, and a prescription is printed out directing the student to new materials;
8. Evaluation and guidance--testing and counseling.

Molnar (1972) provides an up-to-date account of current programs in each of the above areas. For example, Papert (1970, 1971) at MIT has developed a computer language entitled LOGO which provides practice in problem solving. Elementary school children appear able to write programs to draw simple figures, construct geometric designs, generate poetry, and write frame-by-frame movies. The Stanford Research Institute (Brown, 1969) has experimented with a computer-based program for elementary school pupils in effective learning. Most new projects, however, have not yet been evaluated for their effectiveness in increasing student cognitive or socio-emotional growth.

Several major problems are associated with the widespread use of computers for instruction (Molnar, 1970a). Most computer systems are not strictly compatible, and thus instructional programs written for use with one computer system cannot necessarily be immediately implemented with another computer system. There is little present incentive to produce CAI instructional materials. Even if there were, no effective mechanism in education exists to disseminate innovations that involve technology, and instructional programs are usually not explicitly designed to be transportable.

Furthermore, computers require initial costly investments, and they may produce savings only in the long run. Large, centralized regional computer systems with remote terminals can reduce costs while maintaining and perhaps increasing student achievement. However, many regions and systems in the country simply cannot afford the initial costs. Jamison, Suppes, and Butler (1970) examined the cost of providing CAI in urban areas with a small special-purpose computer system. Costs per student per year in such a system are approximately $50 in excess of current local expenditures. The following tables (Table 7.5) illustrate the cost of providing large-scale CAI in rural areas (Jamison et al., 1971).

The two CAI programs that have provided data on efficacy were developed at Stanford University in reading and in mathematics.

Computer-Assisted Instruction in Reading (Atkinson & Fletcher, 1972; Jamison et al., 1971). CAI in initial reading for grades K - 3 is designed to supplement classroom reading instruction. Phonics instruction is divided into seven content areas or "strands"; each strand focuses on a basic component skill of reading. Students work through each strand, progressing to the next step within each strand and to new strands only when a specified performance criterion has been met. Approximately 12 minutes a day is spent with the program.

Fifty pairs of first graders were matched on the Metropolitan Readiness Test, with one member of each pair receiving CAI instruction for about five months and one member not receiving CAI instruction. The Stanford Achievement Test (SAT), the California Cooperative Primary Reading Test (COOP), and a criterion referenced test were administered as posttests to all students. On all three tests the CAI students gained more; their average grade placement was 2.3 on the SAT and 2.6 on the COOP at the end of Grade 1. On the COOP the CAI group showed a 5.05 month gain in performance over the control group. A follow-up test at the end of Grade 2 found the CAI group still performing 4.9 months higher on the COOP than the non-CAI group. Thus, the initial difference between the groups was maintained. Furthermore, boys tended to show larger gains, relative to non-CAI boys, than did girls relative to non-CAI girls.

Atkinson and Fletcher (1972) comment that "individualizing instruction is a key factor in successfully teaching reading." They estimated the yearly cost of the CAI reading program to be around $70 per student.

TABLE 7.5

CAI Costs

Initial Costs, Computer
Components of CAI System*

Component	Cost
Computer system	$2,560
Spare parts and test equipment	200
Planning and installation	350
Building	150
Total	$3,260

*Costs in thousands of dollars.

Annual Costs, Computer
Components of CAI System*

Component	Annual Cost
System operation	$150
System maintenance	175
Building maintenance	20
Supplies	35
Total	$380

*Costs in thousands of dollars.
Taken from Jamison et al., 1971.

Computer-assisted instruction in elementary mathematics (Jamison et al., 1971). The intent of this program, inaugurated in 1965, is to provide drill and practice in arithmetic skills (especially computation) as an essential supplement to regular classroom instruction. The program was used in Mississippi with children in Grades 1-6. The computer presents the student with a question; he types his response, which is then compared by the computer with the anticipated response. If the answer is correct, the computer responds in the affirmative and provides the student with new material. If the student answers incorrectly, the computer presents appropriate remedial material and practice problems. Curriculum material is arranged sequentially in 20-27 concept blocks, each consisting of a pre-test, 5 drills sequenced according to difficulty, and a post-test.

During 1967-68, data were collected to permit CAI and non-CAI group comparisons for California students drawn from upper-middle class schools and Mississippi students drawn from economically and culturally deprived rural areas. Students in Grades 1-6 were included. Stanford Achievement Tests were used for pre- and post-tests. In Mississippi the performance of the CAI students on the computation subscale improved significantly over that of the non-CAI students in all but one of the six grades. The largest difference occurred in Grade 1, where, in three months, the average increase in grade placement of CAI students was 1.14 compared with .26 for non-CAI students. In California, CAI students improved significantly more than non-CAI students on the computation subscale in Grades 2, 3, and 5. On the concepts subscale Grade 3 and 6, Mississippi CAI students gained more than controls, while Grade 4 controls gained more than the CAI students. California Grade 3 and 6 CAI students also gained more on the concepts subscale than controls.

A comparison of California students with Mississippi students showed that:

1. CAI was more effective in Mississippi than in California; and

2. Changes in performance level for CAI groups were quite similar in both states, but the non-CAI group changes were very small in Mississippi relative to non-CAI group changes in California.

Finding (1) above indicates that CAI was more effective with students who performed below grade level and were in need of compensatory education.

Summary, Computer-Assisted Instruction. These two programs do not provide much of an evidential base on which to make conclusions concerning the effectiveness of computer education. Although a large number of programs have been attempted, we have few data on their effectiveness. Molnar (1972) notes that Title III of ESEA has spent an estimated $10 million per year on computer projects, providing funds to each project for three years. As a consequence of the three-year grant limitations, the normal pattern has been to spend the first year staffing the project, the second planning it, and the third phasing it out of business. The school

TABLE 7.6
REORGANIZATION OF CLASSROOM PROCESS
COMPUTER-ASSISTED INSTRUCTION

roject	Year of Inia- tion	Rep- li- ca- tions	N	Grades	Student- Teacher Ratio	Time	Main Features	Parent Involve- ment	Design	Tests	Results	Approx- imate Costs
Computer ssist- d eading	69		25	K-3		1/5 hr 5 days 5 mos.	Computer Assisted reading		50 pairs of 1st graders matched, one member of each pair assigned to exp'l and one to control group Matched on reading readiness	Stanford Achievement Test California Cooperative Primary Reading Test (COOP)	Immediate: Experimentals showed 5.05 month gain over controls on COOP the experimental grade placement was 2.6 On the SAT exp'ls also outperformed controls with grade placement of 2.3 One year later: Exp'ls still scored 4.90 months higher than controls In general, boys benefitted more than girls	Urban ~$50 Rural ~$75-$125
mputer ssist- d Math li- rnia ssis- ippi	67		California: 1000 Mississippi: 600	1-6		1/5 hr 5days sy	Computer arithmetic drill and practice		Pre-post Control	Stanford Achievement Test	Mississippi: CAI students gained more than controls on computation subscale in all but Grade 4; largest difference in Grade 1 (1.14 vs. .26 grade placement); CAI grades 3 & 6 better than controls on concepts subscale, but Grade 4 controls better on concepts subscale California: On computation subscale CAI students in Grades 2,3,&5 gained more than controls; on concepts subscale Grades 3 & 6 gained more than controls	Urban ~$50 Rural ~$75-$125

districts do not have sufficient resources to continue funding the projects on their own at the end of the three-year period. Molnar suggests statewide cooperative efforts to continue such projects, and pleads for a wider-scale, more consistent and systematic implementation of CAI in order to evaluate its effectiveness.

Behavior Modification or Behavior Analysis

Behavior analysis or behavior modification consists of the application of principles derived from experimental research. Essential components of the behavior modification approach are (1) its focus on observation and measurements of behavior (2) its use of principles of reinforcement to increase desired behaviors and to decrease undesired ones, and (3) its systematic use of measurement to continually evaluate progress. These components have wide generalizability and can be used to achieve a variety of goals. For example, a teacher may offer a token or a smile for a correct answer (academic), for extended problem-solving behavior (cognitive), or for politeness or appropriate aggressiveness (adjustment). In all cases, behavior is shaped through systematically rewarding approximations to the desired behaviors and success depends upon the abilities of the behavioral engineer, who in the case of education,is the teacher. To reward the child appropriately, the teacher must know precisely what goals the child should attain -- which requires a statement of behavioral objectives. Thus, the use of behavior modification stimulates precision in both statements of goals and in evaluation.

Several recent reviews have focused on the use of behavior modification in the classroom (Work Group on Behavior Modification in Education, 1971; O'Leary and Drabman, 1971; Walker, 1971). The Work Group identified several main characteristics of the behavioral approach to classroom instruction. These characteristics include objective measurement, precise and objective definitions of target behaviors, emphasis on the consequences of behavior, rather than on antecedents or motivating operations, emphasis on reinforcement rather than punishment, orientation toward achievement of the individual student, and use of programmed instructional systems. It should be noted that programmed instruction and behavioral classroom management procedures are both patterned on the basis of experimentally-derived principles of learning.

Several types of reinforcement have been used in behavior modification classrooms, including social reinforcement, extra privileges, and tangible reinforcers. Tokens which can be exchanged for a variety of reinforcers are one type of tangible reinforcer. O'Leary and Drabman (1971) have reviewed the effectiveness of token reinforcement programs in the classroom. Such programs have been used for less than a decade, but their use in classrooms has grown rapidly.

O'Leary and Drabman (1971) evaluated the effect on children of various ages of token programs on four types of behavior -- disruptive behavior, study behavior, academic achievement, and behaviors of secondary interest which might change such as attendance and bartering. In general, token programs appear to be successful in reducing the frequency of disruptive behavior (O'Leary et al., 1969; Kuypers et al., 1968; Martin et al., 1968) and in increasing study behavior (Walker, Mattson and Buckley, 1969; Broden et al., 1970). Some increases have also been found in academic achievement upon introduction of a token system (Birnbrauer et al., 1965; Clark, Lachowicz and Wolf, 1968; Hewett, Taylor and Artuso, 1969; Wolf, Giles and Hall, 1968). However, these studies do not tell us whether the token system per se or some other concomitants of the token system (e.g., clearly defined objectives) were responsible for the academic improvements. Finally, two studies (O'Leary et al., 1969; Wolf et al., 1968) have been able to detect increased school attendance with token economies.

Token systems are not always effective, however. The behavior of some children does not change (Kuypers et al., 1968; Zimmerman et al., 1969). And some token programs do not seem to be effective. Furthermore, most token programs have been conducted in special classrooms or with atypical children, e.g., in classrooms for the emotionally disturbed or retarded and for unusually disruptive children.

Walker (1971) reviews studies of the educational use of social reinforcement and special privileges. She notes that about one half of the educational studies involving behavior modification used adult social attention as the positive reinforcer. At the elementary school level, two studies (Becker, Madsen, Arnold and Thomas, 1967; Ward and Baker, 1968) have shown an increase in desirable classroom behaviors with the appropriate use of social reinforcement. Most other studies have been conducted with other age groups or with only a small group of children. Walker concludes that "with a few exceptions, this particular set of behavior modification studies in educational settings shows how adult attention can be used to change maladaptive behaviors in a small sample of children (p. 15).

Studies of the use of "free-time" or "a chance to play a game" have also been found to increase appropriate classroom behaviors. For example, Schmidt and Ulrich (1969) decreased the noise level in a fourth grade class by providing a two-minute addition to gym time and a two-minute break for each unbroken 10-minute quiet period, and Hall et al. (1968) increased the studying behavior of second graders by making a class game contingent upon studying.

All of these previously described studies are limited, however. Most have been conducted with small samples or "special" populations over a short period of time. Rarely have follow-up studies been attempted to determine the maintenance of the desired behaviors, or have studies been conducted to determine the generalizability of behaviors obtained using behavior modification.

Several more recent programs are using behavior modification techniques over the entire school year in normal classrooms. Three of the programs the Work Group labeled "behavior analysis" approaches are now Follow Through models -- Becker-Englemann, Behavior Analysis (Bushell) and the Primary Education Project. Another is the Learning Village (Ulrich, Louisell and Wolfe, 1971). The Learning Village is described in the preschool chapter. The three Follow Through models are included in the next section on overall classroom reorganization. Most comprehensive behavior modification projects are, by definition, classroom reorganizations.

In addition to effects on children, the ease of replicating a program is important. The Work Group reports that "there is evidence that teachers can be quickly taught to run behaviorally oriented classrooms at relatively small training cost, although evidence of the effectiveness of such teachers in terms of student outcomes is not available for all programs." (p. 35-36) Evidence from the Planned Variation Interim Report of the 1969-1970 Head Start program found that the behavioral models (Becker-Englemann and Bushell programs) were rated first and second (tied with another program) in implementation success. Other programs have also had success in training teachers to use behavioral principles (Madsen et al., 1970; Madsen et al., 1971).

Critics of behavior modification techniques have been concerned about the possible undesirable long term results, or unplanned, harmful side effects, which may be produced by the use of systematic reinforcement techniques applied to teach "right" behaviors and information. When a behavioral system is used, what are its effects on such processes as curiosity, creativity, initiative, independent thinking, and intrinsic motivation? Although longitudinal studies have not been conducted and side effects are only beginning to be examined (e.g., Miller and Dyer, 1970a), it is reasonable that undesirable outcomes might depend upon the proportion of time and the range of content material for which behavior modification techniques are used. Thus far, they have been used primarily to teach basic skills where there are right and wrong answers, and to control disruptive behavior. Some behaviorists, however, are attempting to develop means of increasing creativity, independent thought, etc., through the use of behavioral principles. In sum, behavior modification techniques, like all others, should not be used indiscriminately and researchers should attempt to assess side effects as well as intended outcomes.

The Work Group (1971) mentioned two other controversial issues -- "the concern that children will become suspicious of honest, human emotion if they find that signs of social approval are being systematically used as incentives to shape their behavior", and "the danger that a teacher might use the techniques to get children to act in his or her own interest, rather than their own (i.e., children can be trained to be submissive and orderly in all circumstances)." (p. 43)

In response to the first issue, the Work Group refers to the variety of ways honestly expressed emotion can cripple the recipient and conclude:

> A logical resolution is that while we need to love one another, we must also be acutely aware of how the expression of this love affects its recipient. Communicating emotion in a way that serves to strengthen maladaptive behavior is not truly focusing on another person and his needs; on the contrary, withholding such 'affection' may be more loving. Behavior management systems can be conceptualized and put into action within a setting of love and respect. It is being done every day. (p. 44)

The second issue the Work Group feels can be handled by requiring the managers of behavioral systems to publicly announce the behavior they are promoting and to justify these behavioral goals in terms of presumed long term benefits.

In summary, the application of behavioral principles to the classroom shows promise. The use of behavior modification techniques has been shown to be reasonably effective in the classroom in increasing desired behaviors and in decreasing undesired behaviors. There is also evidence suggesting that behavior analysis classrooms are successful in increasing acheivement, although their long term effectiveness at the elementary school level has not been ascertained. The conclusion of the Work Group was:

> Despite its relative infancy, the concerns of various critics, and the need for continued research, the record of the effectiveness of behavior modification and its continuing refinement by numerous psychologists, clinicians, educators and other practitioners make it ready, in the opinion of the Work Group, for more widespread promotion at this time. (p. ix)

Dimension 1: Overall Classroom Reorganization

This subcategory includes new classroom approaches to early education. The projects offer new conceptualizations of either the goals of early elementary education, the means to achieve the goals (classroom process) or both. A few projects that rely heavily on individual diagnosis and prescription toward the attainment of behavioral objectives, and the variety of Follow Through models, comprise this category. We shall present brief descriptions of several exemplary projects under each of the three general goal orientations. Some of these categories shall be further divided on the basis of structure.

Academic models

The main goal of these models is improvement in the academic achievement, primarily the basic skills, of disadvantaged children. Although we have grouped these projects on the basis of their goal orientation, many are similar in the process used to attain the goals; many use principles of behavior modification. Objectives are operationally defined and sequenced according to their level of difficulty. The material to be learned is presented in small amounts, with review whenever necessary. Direct reinforcement of the child and continual evaluation of his progress are considered important responsibilities of the teacher. In sum, the projects are highly structured.

Fernald School Remediation of Learning Disorders Program (Wargo et al., 1971). The Fernald School at the University of California in Los Angeles provided highly individualized remedial instruction (from 1966 to 1968) to an advantaged and disadvantaged group of male second to eighth graders who had similar learning disorders. A third group of disadvantaged children received special reading instruction at their schools from Fernald teachers (the Enrichment group). All children were at least 1.5 years behind the national norm in school achievement, did not have severe neurological or emotional problems, and were of average intelligence. The four groups (the three above and a disadvantaged control group) were matched in age, IQ, and severity of learning disability. The disadvantaged students were bused to a school generally serving tuition only students.

The project is academic in its goal orientation, and mornings are typically devoted to the basic skills of reading, language, and mathematics. After lunch children participate in activities in various content areas, depending on their needs and interests. Primary characteristics of the Fernald project are (1) individualized diagnosis and assessment, planning for needs, instruction, and evaluation of progress, (2) a low student-teacher ratio, and (3) a distinctive school environment resulting from these and other special characteristics. In each classroom of a maximum of 20 students there are three or four undergraduate trainees each hour and a demonstration teacher. Interdisciplinary teams are established (e.g., education, psychology, social work) and meet weekly to discuss instructional strategies and remediation for specific students. Classroom instruction is the central emphasis of the project, and each lesson is designed to remedy deficiencies in such areas as visual perception, comprehension skills, or auditory discrimination.

The Enrichment group received supplementary reading instruction from Fernald teachers for three to five hours per week. Fernald teachers visited the schools and worked with small groups of three or four students one hour a day for three days a week. The second year the regular school teachers took over the reading project, and the third year a teacher and an aide worked with small groups, using the type of individualized instruction practiced at Fernald.

Five instruments were consistently used to evaluate the four groups of participating students during the academic years 1966-1969: the California Achievement Test (CAT), the Wechsler Intelligence Scale for Children (WISC), the Test Anxiety Scale for Children, the Vocational Checklist, and the Ethnic Attitudes Instrument. On the CAT, the gains made by the advantaged and disadvantaged Fernald groups were not significantly different; the disadvantaged Fernald group gained significantly more than the Enrichment or control group; and the gains made by the Enrichment and control group were not significantly different. The Fernald groups made gains of approximately 1 year during 9 months, while the other groups made gains approaching 7 months. On the WISC there were no significant differences between groups on the Comprehension or Vocabulary subtests, but on the Arithmetic subtest the Fernald disadvantaged group gained more than the other two disadvantaged groups and the Fernald advantaged group. Change score analyses on the Test Anxiety Scale indicated a decrease in anxiety scores for all groups, with no difference among them. On the Vocational Checklist, Fernald junior high boys did not raise their aspirations, but Fernald disadvantaged elementary boys showed an increse in aspiration greater than the advantaged elementary boys. The Ethnic Attitudes Instrument showed no differences among the three groups of disadvantaged boys.

"It appears that although the Fernald School had a strong impact on the cognitive achievement of its disadvantaged and advantaged pupils, the success of the program in the noncognitive domain was not convincingly demonstrated." (p. 82)

Individually Guided Education (Wisconsin Research and Development Center for Cognitive Learning, 1971). Individually Guided Education is precisely what its name implies: focus on the needs and learning patterns for each child. In order to accomplish this objective, IGE insists that a comprehensive system change must occur, not merely a focus on one area of the educational process. IGE is composed of seven units: (1) the multiunit elementary school (MUS-E) provides for the organization of instruction and administrative aspects of the setting; (2) the instructional program is academically-oriented with individual needs being paramount; (3) measurement tools and evaluative designs are developed in conjunction with the school staff; (4) materials and tests for curriculum adaptation are designed for reading, pre-reading, mathematics, environmental education and motivation; (5) efforts to improve home-school communication is stressed; (6) a network of school-related offices and support agencies is established; and (7) research and development to update the program and test materials is also implemented.

This organizational scheme describes the entire IGE system initiated in 1965. At the classroom level, many changes occur. The same-age, self-contained classroom is replaced with a nongraded instructional and research unit (I & R) in which is found a three-to-four year age span in students. Each unit is composed of a lead teacher, three to four staff teachers, one instructional secretary, one intern, and 100-150 students. The unit operates as a group to plan, carry out, and evaluate the instructional program for each child.

Evaluation of IGE includes analysis of both the MUS-E and the instructional programs during its first year of operation. MUS-E schools differed from control schools in ways specified by their objectives (more emphasis on planning, specialization of the labor force within the school, new loci of decision making and higher job satisfaction and morale). Children in Grades 1-3 were tested in reading skills before and after one year of training. The results on both criterion-referenced and standardized tests generally indicated that the project was moderately successful in this domain, especially in comparison to children who had not experienced the project. IGE emphasizes, however, that both organizational change and coordinated, well-planned curriculum improvements are necessary to achieve success for the child and the school system.

Summary, Overall Classroom Reorganization: Academic Models. These projects have, in general, been successful in increasing performance on achievement tests. In several cases performance has been at grade level expectation or above. Most of the results reported here, however, are results from the experimental phases of the projects. Follow Through data will provide information on the success of some of these projects when exported to other sites for replication. Furthermore, we have no follow-up data and thus do not know if the gains effected by these projects are maintained.

Cognitive Enrichment Models

Cognitive enrichment models are quite diverse in their theoretical positions, their goals and objectives, and their instructional strategies. These projects do not focus solely on academic achievement, but neither do they make social and emotional development their primary goal. All are concerned, one way or another, with providing a solid base of experiences for current and later cognitive growth. There are five main content areas which are popular with cognitive enrichment projects: language training and enrichment, knowledge building, cognitive skill training, discovery processes, and sensory training. Language projects may be conducted for only English-speaking children or for children whose home language is not English. In the former case emphasis may be on oral language, on associating words with objects, or on elaborating descriptions of objects or of one's thoughts. In the latter case, the projects frequently use and build on the child's own language and cultural experiences, gradually introducing English as the language of instruction. The Cultural-Linguistic, the Bicultural/Bilingual, and the Language Development (Bilingual) Education Follow Through models are examples of these latter language-focused projects for early elementary children.

TABLE 7.7
OVERALL CLASSROOM REORGANIZATION
ACADEMIC GOAL ORIENTATION

Project	Year of Iniation	Replications	N	Grades	Student-Teacher Ratio	Time	Main Features	Parent Involvement	Design	Tests	Results	Approximate Costs
Fernald Remediation of Learning Disability Project California	66		220	2 - 8	5:1	sd 5 days sy	Comprehensive remedial, individualized diagnosis, instruction, and assessment requiring detailed planning	When necessary	Pre-post 2 Control groups, one receiving special reading instruction from Fernald teachers One advantaged group received Fernald program	California Achievement Test (reading, math, language arts)	Data Pooled for 1966-69 Fernald group gained more than both controls and same as a comparable advantaged group with same program; Fernald groups had 1.3 rate of gain	
										WISC	No differences between groups on Comprehension and Vocabulary subtests; Fernald disadvantaged made greater arithmetic gain than other groups	
										Test Anxiety Scale	All groups decreased, but not significantly	
										Vocational Checklist	Fernald disadvantaged showed greater increase in aspirations than Fernald advantaged	

TABLE 7.7 (Continued)

Project	Year of Inia-tion	Rep-li-ca-tions	N	Grades	Student-Teacher Ratio	Time	Main Features	Parent Involve-ment	Design	Tests	Results	Approx-imate Costs
Learning Village (Work Group on Behavior Modification 1971)				Infancy through 6	5:1	all day 5 days 12 mos.	Behavioral methodology academic and personal goals; DISTAR materials	Parents are taught behavioral procedures	Posttest Norms	Boehm Test of Basic Concepts Gates-MacGinitie	Kindergarten and Grade 1: Five of seven disadvantaged children scored above 90th percentile Grades 1 - 3: Most Grade 1 children scored above norm, none below grade level, only two of 15 children scored below norm, and these two had entered the program during the year with marked deficits	$4,500 including possible replication at $1,200-$1,500
Becker-Engelmann (Work Group on Behavior Modification, 1971)	68		2000 in 68				DISTAR materials, behavioral methodology, tangible reinforcers where appropriate	Some parent involvement	Pre-post Norms	Wide Range Achievement Test in Reading	Entered in Grade 1 (n=414): End of Grade 1--mean grade rating of 2.0 years End of Grade 2--mean grade rating of 3.5 years Entered in Kindergarten (n=79): Mean grade rating of 1.2 years at end of Kindergarten and 2.4 at end of Grade 1	$300--$325

TABLE 7.7 (Continued)

Project	Year of Iniation	Replications	N	Grades	Student-Teacher Ratio	Time	Main Features	Parent Involvement	Design	Tests	Results	Approximate Costs
DISTAR materials Prince Georges County, Maryland (Work Group on Behavior Modification, 1971)	70		115	K - 1		DISTAR curriculum materials 5 days 9 mos.	DISTAR math, reading, and language drills		Pre-post Control--more advantage, regular curriculum in math, "Language Experience" for reading	Test of Basic Experience Wide Range Achievement	Kindergarten and Grade 1: experimentals made greater gains than controls; in Grade 1 math gap was reduced, and in Kindergarten and Grade 1 language, gap closed Experimentals at all grades scored higher than norms and slightly higher than controls	
Behavior Analysis (Work Group on Behavior Modification, 1971)			70	K - 1		sd 5 days 9 mos.	Behavioral methodology; individualized instruction, programmed materials, token economy		Control--another Title I School	Wide Range Achievement Test	Trenton, New Jersey: Experimentals exceeded grade level norms each year while controls fell further behind and failed to meet grade level	$685 Possible replication for $350

TABLE 7.7 (Continued)

Project	Year of Inia-tion	Rep-li-ca-tions	N	Grades	Student-Teacher Ratio	Time	Main Features	Parent Involve-ment	Design	Tests	Results	Approx-imate Costs
Individually Guided Education (Wisconsin R & D, 1971)	68			K - 6	20:1	sd 5 days 9 mos.	Non-graded units with 3-4 year age span; Diagnose and prescription toward behavioral objectives; Sequenced reading and math curriculum materials	Program of home-school communications		Doren Diagnostic Reading Test	Grade 2: experimentals scored higher than controls	

Knowledge building approaches attempt to increase the variety of the child's experiences through field trips, newspapers, filmstrips, sharing experiences with others, and so forth. Cognitive skill training focuses on reasoning and problem-solving. Piagetian content areas, such as classification, seriation, and causation, are frequently included in the curriculum. Discovery process models place importance on the child's seeking information for himself within an environment structured to support his self-selected learning activities. Finally, sensory training approaches emphasize that knowledge is built through concrete encounters with reality, especially for young children. Thus children are exposed to a variety of sensory experiences.

Rarely would we expect to find a project which focused on only one of these content areas. Generally, two or three are considered most important, while the others are recognized but assume less importance.

Cognitive enrichment models vary not only in their major objectives, but also in the amount of structure with which they are implemented. Some are highly structured with precisely defined objectives, individual diagnosis and evaluation of progress, and sequenced instructional activities. For example, the Individually Prescribed Instruction model uses behavioral methodology to attain cognitive goals. In this model individual diagnosis, prescription of sequenced instructional activities, and positive reinforcement for successes are used to teach academic skills and concepts in language, perceptual-motor mastery, reasoning, and classifcation. The Language Development-Bilingual Education project and the Mathemagenic Activities project are other cognitively-oriented projects which use behavioral methodology.

Language Development-Bilingual (Southwest Educational Development Laboratory, 1971b). The Southwest Educational Development Laboratory developed in 1966 a Language Development and Reading Program which placed special emphasis on bilingual education. While attention is given to language materials and instructional methods, the child's self-confidence is seen as a crucial element in the development of special skills. Goals include development of thinking skills, refinement of native language, acquisition of standard English, and promotion of self-confidence and personal worth. Curriculum materials include initial instruction in one's native language, use of concrete experiences with descriptive language,employment of materials relevant to the subject matter, emphasis on syntactic and phonetic methods, and understanding one's own culture. These components are consistent with the rationale for the bilingual approach so they are expected to foster interest in the development of literacy in English, in linguistic decoding and encoding skills, and in appreciation of other cultures. A key feature of the project is teaching language skills through a variety of content, especially in science and social studies. The daily, three-hour program may be used in the standard self-contained classroom or by a team of teachers. Inservice training sessions are held to help teachers implement the goals of the model.

The three test sites for the program contained lower income Spanish-speaking Mexican Americans, in kindergarten through Grade 5. These children had been taught using a bilingual approach; the same material was presented in both English and Spanish. Pre- and posttest instruments for the formative and summative evaluations included criterion-referenced tests, standardized tests, and a teacher-opinion questionnaire. Children actually tested were in first and second grade, plus a few third graders in one site.

The results indicate small gains on a few tests; however, performance seldom met the stated objectives. When standardized tests were used, such as the Short Test of Educational Ability (Spanish version, STEA) the pre- and posttest IQ scores were usually both significantly below national norms. The criterion-referenced test criterion was a 75% correct response for items; only one site frequently attained performance at this level. In sum, the data seem to indicate that the project objectives were moderately met in one site; in a second site, objectives were not met, and in the third site data are merely descriptive since the program started late in the school year (pre- and posttesting in April and May).

Teachers' opinions about the program also varied among sites. The general opinions concerning the project and the adequacy of the training were rated fairly high by the teachers in the first two sites. Some sites rated pupil interest high, but there seemed to be agreement about the inappropriateness of the materials for the children. Many teachers did not feel that the tests reflected pupil performance levels, or that observable changes occurred as a result of the project. While the data imply, at best, weak support for the project (gain scores), the developers have used the information from the evaluations to improve the program in later years.

Mathemagenic Activities Program (MAP) (Follow Through Model). The Mathemagenic Activities Program is an activity-oriented project, based on the assumption that active manipulation and interaction with the environment are the bases for learning. The project draws from Piagetian theory in its postulate that cognitive and affective development are the products of interaction between the child and his environment. Individual and group tasks with concrete materials allow the child to experiment and problem solve, and care is taken to ensure that materials are at the child's developmental level. Both teaching techniques and curriculum materials use sequential arrangement of tasks in small steps.

Recommended teaching strategies and detailed lesson plans for eight curriculum areas (K-3) are provided. Music, art, and physical education are considered of equal importance to language, science, math, and social studies. Self-confidence and motivation to learn are considered to result from the mathemagenic approach to learning.

The child participates in both highly structured and relatively unstructured learning situations. Small group instruction by teachers and aides is common, but individual activity is also stressed. The classroom arrangement permits several groups of children to be engaged simultaneously in similar or different activities.

Curriculum specialists offer inservice teacher-aide training each month, and a Project Advisor coordinates the model with other aspects of the Follow Through project. In addition, preservice workshops are held each year to provide experience in using the curriculum materials and in implementing MAP principles.

Hampton Institute Nongraded Model (Follow Through model). The Hampton Institute approach emphasizes heterogeneous multi-age grouping and individualized curricula. The principal objective is to guide teachers and administrators toward greater competence and understanding of the unqiue needs of disadvantaged students. Teacher planning and decision-making are crucial in the open classroom, and diagnosis and prescription for individual students is a daily function.

Teachers use the Institute's "Nongraded Skills Sheets" to diagnose the needs of children and to prescribe instruction; timing and pacing are determined on the basis of the diagnosis. Included in the Skills Booklet are word recognition skills, skills in comprehension, and other skills in specific content areas. A variety of materials and texts are used in the classroom, and self-directed activities among students are stressed.

Demonstration teachers provided by the sponsor present demonstration lessons, develop instructional materials, assess teacher progress,and develop research strategies. During workshops attention is focused on planning, building good self-concepts among pupils, and individualizing instruction.

Adjustment Models

Adjustment-oriented early elementary projects maintain that academic and cognitive skills should not be considered in isolation from social and emotional development. Cognitive growth is seen as only one component of the child's total development, and it is inseparable from social and emotional growth. The goals of adjustment-oriented projects are typically broad and difficult to define in behavioral terms. They generally center around the child's attitudes toward himself and the world around him. A positive self-concept, a sense of trust, respect for others, curiosity, and independence are considered not only legitimate, but critical educational objectives. Heavy emphasis is given to intrinsic motivation and to reinforcement obtained through mastery. The classroom and the role of the teacher are designed to be responsive to the child and his needs and to support his initiative. Three Follow Through models exemplary of this approach are the Bank Street, Education Development Center, and Responsive Educational (Far West Laboratory) projects.

Education Development Center Open Education Program. The EDC Follow Through model is an open classroom, where children choose their own activities from the range of materials provided in the classroom. Learning is believed to be facilitated when the child actively participates in and explores his environment. Teachers in the classroom take the lead of the child in choice of materials but then try to extend the child's involvement with the activity. The teacher interacts more frequently with a small group or an individual child than with an entire class.

Traditional academic skills are considered important, but the EDC approach holds that education must go far beyond skill training. Social and emotional development, the ability to express one's self creatively and functionally, and the ability to take responsibility for one's own learning are major goals.

An EDC advisory team makes monthly visits to the community to assist schools in setting up an open education project. The team holds workshops, works with teachers and aides in the classroom, helps them develop their own instructional equipment, and assists school administrators with problems related to classroom change.

Bank Street College of Education Approach (Follow Through model). The Bank Street model is based on a developmental approach to the growth of the "whole child". Learning and healthy emotional development are interrelated, and children must build positive images of themselves as learners. The objectives of the project include enabling every child to become self-directed in his learning, fostering a positive self-image, and helping children learn to use language to express ideas and feelings. The learning environment is frequently restructured to best meet the needs and interests of the children.

The classroom is organized into work areas, and planned activities are organized thematically -- focusing first on the home and school and then extending to the larger community. Children learn academic skills within the context of these activities.

The Bank Street sponsors support parent involvement in each community by providing interpretive materials and special training consultants and by joint planning for home-school interaction. Parents may receive career development training with undergraduate or graduate credit.

Staff development occurs at the site and at Bank Street College. Self-analysis is stressed, with staff development intended to provide a repertoire of instructional strategies and to deepen insights into means of supporting children's learning. Diagnostic tools are provided for assessing child behavior, child-adult interaction, and the physical and social milieu of the classroom.

Responsive Educational Program (Follow Through model). The goals of this model are for the child to (1) make interrelated discoveries about his physical and social world, and (2) develop a healthy self-concept. The child should accept himself and his culture, be able to realistically estimate his own abilities and limitations, and have confidence in his ability to succeed.

The classroom environment is structured to be responsive to the individual child's needs, culture, and interests, and learning activities are designed to be self-rewarding (autotelic). The child is free to explore the classroom environment, which contains various learning centers and games, and to experiment, ask questions, and make discoveries on his own. Because the child chooses his own activities, he is considered more likely to become affectively involved and to develop problem solving skills. Feedback from the classroom materials stimulates learning, and the child is rewarded by the activity itself. Learning sequences have been developed, but children work at their own pace.

Someone from the community is trained as a Program Advisor, and conducts inservice training for all staff and parent groups. The Program Advisor is also responsible for seeing that the model is implemented in the classroom. Parents are offered training as teacher assistants, typing booth attendants, and similar jobs which are career-oriented. Parents are also offered training in the objectives of the project and are encouraged to pursue these objectives at home. A game and toy library, including filmstrips on use of the games and toys, is available for parent use.

Dimension 3: Organizational Changes

Organizational changes are changes in the configuration of traditional schooling which occur outside the classroom. The organizational aspects considered here are quite diverse in the part of the configuration they modify. They all constitute departures from current "typical" educational practices. Rather than place them in previous sections, they are discussed below.

Parent-Mediated Projects

Discussions of critical components of compensatory education frequently include the notion of parental participation. Project directors at least hope to enlist parental support. The enacting legislation and regulations of Title I require community involvement in planning, operation, and appraisal. To this end each project is directed to have some mechanism for community involvement such as an advisory committee with representatives of the community comprising at least one-half of its members. Follow Through also emphasizes the need for a partnership among home, school, and community. Low-income parents of Follow Through pupils must constitute one-half of the membership of local Policy Advisory Committees (PACs), which are involved in all phases of project development, implementation, and monitoring.

The belief in the significance of the contribution parents can make to the effectiveness of compensatory projects is based on a number of assumptions. Some consider deficits in the home, rather than in the school or in innate ability, to underlie insufficient development of the skills and attitudes required for academic success. Others stress the need for continuity between the skills emphasized and the attitudes expressed in the home and at school, if projects are to be successful. Some argue that it is more efficient and economical to approach parents directly, thereby affecting (on the average) more than one child, than it is to work with each each child individually.

McLaughlin et al. (1971) identified two theoretical positions that seem to underlie most efforts to involve parents in compensatory projects: (1) "the nature of the interaction between a child and his parents determines in large part the degrees of success or failure the child will experience in school", and (2) "those parent interaction variables which have been found to have the greatest influence on a child's academic achievement -- while related to socioeconomic status -- are not absolutely determined by status factors" but appear to be attitudes and behaviors potentially capable of being modified (p. 4).

Because so many educators voice a concern with some form of parental involvement, initially we had hoped to include in our taxonomy a dimension of parental involvement, ranging from minimal to maximal. Project descriptions, however, were simply too vague to enable the ranking of projects on extent of parental involvement. Since parental involvement is generally thought to be a "good thing" it is widely mentioned, but few projects substantiate their claims with numbers of participants or even with detailed prose descriptions of precisely how parents participate. To avoid the arbitrariness of ranking projects by such descriptions, we have opted to describe projects with a major emphasis on parental involvement and/or control under the rubric of organizational change.

The parent-mediated projects described here have two separate emphases. One emphasis is on providing parents with skills needed to become better teachers of their own children; parents are considered critical for their role in stimulating and supporting the child's learning in the home. Parents can also participate directly in the instruction of their children in the classroom setting. The Florida Parent Educator Model, the Home-School Partnership, and the Parent Supported Application of the Behavior Oriented Prescriptive Teaching Approach (all Follow Through models) and the Flint, Michigan, School and Home Program are exemplary of this emphasis. In the second type of parent-mediated project, major discretionary and decision-making powers are transferred from established school authorities to a parent group. The Parent Participation Model of Afram Associates is representative of this category.

McLaughlin et al. (1971) reviewed university demonstration projects, about 500 Title I projects, and the general literature in compensatory education to identify projects that emphasized parent involvement. Parent involvement projects were divided into two groups somewhat different from ours. Parent participation projects were defined as those "which seek to foster improved home-school relations and understanding through (a) increased parent participation in school-sponsored activities or (b) parent participation on advisory groups". Parent training projects "expressly aim at providing parents with training designed to furnish them with skills specifically relevant to involvement in their children's education" (p. 16). Our category of organizational change does not really include McLaughlin's first group, as the data and descriptions available do not justify sufficiently such inclusion. McLaughlin calls our second group of programs (transfer of powers) 'training for participation', and includes them in her training category.

After reviewing the project reports, McLaughlin made the following conclusions about parent participation projects:

> Even though CEPR's review of 'successful' Title I programs found that parents do participate in the overwhelming majority of successful programs, and that parental involvement of any kind is conspicuously absent in programs which fail to meet their objectives, all that can be said with justification about this finding is that successful programs and parental participation appear to covary together. While it is tempting to infer that the participation of parents in some way contributes to the success of the programs, it is perhaps closer to the truth. . .to say that the personnel who staff successful programs are also the personnel who work well with low income individuals and who, with or without parent participation, can implement a successful program. (p. 38)

With regard to parent training projects, she concludes:

> Just as in parent participation programs, program structure and content as well as the means employed to reach parents and maintain a high level of parent involvement in the program are central to the success of parent training programs. . .The effects of parent training programs on parents parallel those seen in participation programs, but appear more impressively and consistently. (p. 64)

The effects on parents to which McLaughlin is referring above include (1) the identification and development of indigenous community leadership, (2) acquaintance of parents with opportunities for their own personal development, and (3) establishing more positive relations between parents and school personnel. McLaughlin emphasizes, however, that if one wishes to look for effects of parent involvement on the child, parents must be given concrete operational suggestions concerning ways to participate in the education of their children.

School and Home Program, Flint, Michigan (Wargo et al., 1971). The School and Home Program attempts to raise the academic achievement and improve the study skills of disadvantaged, underachieving elementary school students by: (1) assigning special reading materials and homework to project children, and (2) helping parents to improve the home-study environment. Most of the parents were low income blacks with limited educations. Their role was explained at orientation meetings, teacher conferences, and in written instructions. The parents' role was to read to their children, show interest in their school work, send them to school rested and fed with appropriate materials, and thereby communicate positive attitudes toward school and academic learning.

During the first year of the project (1961-62), children in two experimental and one control school were pre- and posttested with the Gales Reading Test. Second and fifth grade experimental children gained more over a five-month period than control children. And the children gained more than five months in reading age. The project's effects have not been formally evaluated since 1961-62.

The project has been expanding; by 1970-71 it included Kindergarten through sixth grade children in more than twelve schools. Additional information on the effectiveness of the project will be provided when evaluations of Follow Through models are published.

Florida Parent Education Model (Follow Through model). The primary focus of this model is on educating parents to participate directly in the education of their children and on motivating them to provide a home environment that supports better child performance in school and in their social life. Parents are recognized as a key factor in the emotional and intellectual development of their children, as being uniquely qualified to guide their children's education.

Responsibility for curriculum development resides with parents and school staff. Mothers of project children are trained as teacher auxiliaries and as educators of other parents. Half of their time is spent in the classroom (two to a classroom), and half is spent making home visits during which they demonstrate learning tasks and solicit ideas and information on which strategies are effective. Learning activities at home and in the school are integrated. The parent educator also serves as a referral agent for medical, dental, psychological, and social services; informs parents about school functions; and informs parents of their child's progress in school.

Preservice and inservice training are provided by the sponsor. Attempts are made to maintain a constant exchange of information among the sponsor, the local education agency, and the parent community.

Afram Parent Implementation Educational Approach (Follow Through model). Afram Associates, Inc., a nonprofit educational research consulting group, has developed a model which focuses on parent implementation of their children's education. The objective of the group is to organize and educate the parent community to assume the role of major decision-makers regarding their children's education.

Classroom instruction should be selected and developed by parents, and teachers are accountable to the parent community. Interaction between parents and teachers and teacher respect for parents and children are crucial. In some projects the instructional approach of one of the other Follow Through models may be implemented, with Afram organizing the parent community.

Parents are educated to function (both paid and unpaid) as community organizers, teacher aides, volunteers, foster teachers, and homework helpers. In addition to parent coordinators who represent the Follow Through Project in eliciting parental cooperation, Afram employs someone selected by the parent community who functions as a community organizer. This individual stimulates contact between parents in the community and the Policy Advisory Committee (PAC) and encourages parents to develop community based projects to deal with community problems such as drug addiction, poor housing, lack of medical service, etc.

Afram considers itself to be a tool of the community. It enlists the aid of the PAC and the school in project evaluation and it serves as a disseminator of information, ideas, and technical assistance.

The Community and Staff Development Summer Program (Phase I). This project was planned jointly by members of the Los Angeles City School District's Title I Citizen's Advisory Committee and District staff. The overall objective of the program was the development of an effective two-way system of communication through a strong inservice training program. The specific goals of the program were:

--to merge parents and staff into a cohesive unit that would be more knowledgeable in the development and implementation of compensatory education programs for the educationally deprived child;

--to increase the knowledge and skills of parents and staff in developing, financing, implementing and evaluating all compensatory education programs;

--to develop an awareness and understanding of the pupils and community which the professional staff serves, thus enabling them to be more effective in their teaching.

The program consisted of twenty-one two week workshops in which more than 4,000 participants were registered, 1,800 of whom were parents. Participants included parent members of the Title I School Advisory Committees, District Citizen's Advisory Committee members and both certificated and non-certificated personnel from Title I schools. Parents and staff jointly attended workshops which were planned to give participants knowledge and skills in the areas of human relations and school budgeting, as well as familiarity with the philosophy of compensatory education, guidelines for Title I, the role and organization of the local school advisory committees and the organization of the Los Angeles City Unified School District. Morning, afternoon and evening sessions were held to accomodate the varying job schedules of participants.

The workshop sessions were planned to include large group assemblies with speakers, films, and recordings and small groups composed both of parents and staff working together under the guidance of a school staff workshop leader and a co-leader from the local community. The small group discussions were structured by discussion topics, group reports, assigned reading and group projects. Translators and Spanish speaking small groups were employed in largely Mexican-American East Los Angeles. All workshop participants, professionals and non-professionals alike, received a stipend of \$4.60/hr. for a maximum of 30 hours. (This was considered to be a fee an "expert" would receive; project staff thus hoped to underline the active role they hoped community members would take in the workshop sessions as "experts" about their community and children.) The stipend to parents facilitated their participation.

TABLE 7.8
ORGANIZATIONAL CHANGE
PARENT-MEDIATED MODELS

Project	Year of Inia-tion	Rep-li-ca-tions	N	Grades	Student-Teacher Ratio	Time	Main Features	Parent Involve-ment	Design	Tests	Results	Approx-imate Costs
School and Home Program Michigan	61		1962: 1100 1963: 2300	K-6	1:1	v sy	Focus on parent encouragement and help for children by reading to them, listening, quiet period for study, etc.	Central-therapeutic agents	Pre-post Control	Gates Reading Test	1961-62: Only Grades 2 & 5 tested; experimentals gained more than controls and had a rate of gain exceeding 1.0 No evaluation since	$3.50 excl. salaries

Both the program evaluation and the comments of community members reflect the high degree of success and continuing impact achieved by this two week summer program. The project director has said that he views the participation of the community in all phases of the program -- from advance planning through implementation -- as the most significant factor in the program success. Chairmen of the Citizen Advisory Committees observed that parents are visiting the schools and their children's teachers and attending meetings for the first time . . .that they have begun to perceive their role as "parent" in a new light.

Title I staff and community members were in agreement concerning the effects that the new awareness and participation generated by Phase I seem to be having on the schools. It was reported that staffing patterns have begun to change. Often, administrators and teachers who did not feel comfortable with the new level of community involvement and the concomitant increased "accountability" simply left. New budgets reflect a shift away from expenditure on equipment to a greater allocation of monies for direct services to the child, especially more teachers.

Program evaluations submitted both by outside evaluators and program participants concur that Phase I met its original objectives.

Educational Performance Contracts

An educational performance contract is an agreement between a local educational agency and a learning systems contractor for instruction in specified areas for a certain group of students. Payment to the contractor is contingent upon the measured achievement of the students. Most performance contracts have been commercially sponsored, but individual teachers or teacher groups have also been involved. Since 1969 over 100 performance contracts have been undertaken (Hall et al., 1972).

The goals of performance contracting have centered on three main issues: (1) potential improvement in compensatory education; (2) stimulation of educational innovations; and (3) development of a system of educational accountability (Hall et al., 1972). Learning systems contractors make their rewards contingent upon their performance in raising students' achievement. Accountability is thus central and motivation to succeed should therefore be high. Performance contractors would be expected to use the most effective instructional techniques for their students, thereby introducing new and perhaps more appropriate curriculum materials into the school system.

Most performance contracts have focused on reading and mathematics, partly because most projects have been remedial but also because assessment indices are available in reading and mathematics. There must be a means to quantitatively evaluate the effectiveness of the contractor in achieving his goals. The Rand Corporation (Hall et al., 1972) has summarized the major characteristics of performance contracting programs with the following generalizations:

> --Most programs have operated as components within a conventional school setting.
>
> --In general, the contractors have used new materials and teaching techniques with special emphasis on individualized diagnosis and specifications of instruction. . .
>
> --Most contractors have been directly involved in the classroom, but the teachers have usually been local educational agency (LEA) employees. Most contractors have viewed their classroom activities as a passing phase, leading to "turnkeyed" systems whereby the LEAs ultimately take over and operate the new systems as part of their regular programs. (pp. 10-11)

Two major reviews of performance contracting have been conducted -- the aforementioned Rand Corporation study prepared for the Assistant Secretary for Planning and Evaluation, Department of HEW, and one by Battelle Columbus Laboratories prepared for the Office of Economic Opportunity. We shall briefly review the results of both.

During the school year 1970-1971, OEO funded an experiment in performance contracting, providing federal support to participating school districts for subcontracting remedial teaching in reading and mathematics to private educational technology companies. Eighteen school districts were involved with four large urban school systems, several middle-sized urban systems, and smaller and rural systems represented. Six technology companies, providing a range of educational approaches, were each responsible for three fairly dissimilar school districts. Table 7.9 compares some of the features of the six companies. The use of programmed materials and the relatively high percentage of paraprofessionals are particularly striking aspects of all six approaches. The teachers for five of the companies were company employees; however, Alpha trained and supervised teachers employed by the schools.

The students involved were in Grades 1, 2, 3, 7, 8, and 9, were behind grade level in reading and mathematics, were members of "low income families", and were representative of minority groups within the school district. In all, around 13,000 experimental and 12,000 control students were involved in the study. Children were not randomly assigned to experimental and control groups, but attempts were made to match the two groups in initial achievement and SES.

Pre- and posttests for Grade 1 were the Stanford Early Achievement and the California Achievement Test. The Metropolitan Achievement Test was administered to Grades 2, 3, 7, 8, and 9. Regression analyses were used to compare experimental and control groups at each site/grade/subject combination. The results of these analyses were summarized by Ray et al.

TABLE 7.9

Comparison of Particular Aspects of Experimental Programs*

Company	Average Percent of Paraprofessionals	Average Student/ Teacher Ratio	Use of Incentives	Instruction
ALPHA	Elementary: 45% Junior High: 35%	Elementary: 1/14 Junior High: 1/15	Heavy emphasis on tokens and skins which could be traded for a variety of prizes or free time at any time	Heavy use of programmed materials and individual instruction
Singer/ Graflex	Elementary: 55% (Does not include McComb: 9%) Junior High: 32% (Does not include McComb: 6%)	Elementary: 1/20 Junior High: 1/20	Incentives used moderately and awarded infrequently	Primary reliance on programmed materials and group instruction
Quality Educational Development	Elementary: 50% Junior High: 50%	Elementary: 1/13 Junior High: 1/13	Heavy reliance on all types of incentives awarded randomly at least once a week	Heavy use of programmed materials with tape and cassette teaching machines
Learning Foundations	Elementary: 100% Junior High: 100%	Elementary: 1/5 Junior High: 1/6	Incentives used only moderately but awarded frequently	Used programmed materials and individual or group instruction
Plan Education Centers	Elementary: 50% Junior High: 50%	Elementary: 1/6 Junior High: 1/5	No incentives used	Used primarily teacher instruction with some tapes and cassettes
Westinghouse Learning Centers	Elementary: 80% Junior High: 80%	Elementary: 1/12 Junior High: 1/12	Heavy use of incentives in elementary grades, but few incentives used in junior high. Incentives awarded infrequently at random	Heavy reliance on programmed materials with tape and cassette teaching machines in individual and group instruction

*Taken from Ray et al., 1972 (Table 1).

(1972) by tabulating the number of positive impacts (the number of times the experimental group outperformed the control group), of negative impacts (control outperformed experimental), and of nondifferences. There were a total of 28 positive and 60 negative impacts. However, 124 comparisons showed no difference between experimental and control groups (see Table 7.10). More detailed results were:

(1) Almost twice as many positive impacts occurred at the elementary level (18) as at the secondary level (10).

(2) Of the 28 positive impacts, 23 occurred at sites associated with three of the six companies. Unfortunately, however, site and company are confounded since no two companies had programs in the same site.

A more detailed regression analysis controlled for group differences in race, father's education, total family income, and parents' approval of new instructional methods in addition to differences in pretest score. Fifteen group differences (8%) were found in favor of the experimental group, 27 group differences (15%) in favor of the control group, and 142 group differences (72%) were not significant.

Figure 7.11 compares the gains of the control and experimental groups relative to grade norms in mathematics and reading. The slopes of the arrows are approximately equal, showing similar gains for the two groups and indicating that the experimental group was not gaining at a faster rate than the control group.

Ray et al. (1972) concluded:

> There is very little evidence that performance incentive contracting, as implemented by the technology companies at the 18 school districts in this study for a period of one year, had a beneficial effect on the reading and mathematics achievement of students participating in the experiment, as measured by a standardized achievement test. (p. 142)

These results, while not encouraging, should not be overgeneralized. Ray et al. pointed out three major limiting conditions to be applied to the conclusions. The analysis evaluated performance incentive contracting (1) as implemented by six technology companies (2) for a period of only one year (3) using a standardized achievement test.

The Rand/HEW study of peformance contracting included eight performance contracts in five cities -- Norfolk, Virginia; Texarkana, Arkansas; Gary, Indiana; Gilroy, California; and Grand Rapids, Michigan. The eight projects included a relatively large number of disadvantaged students, with

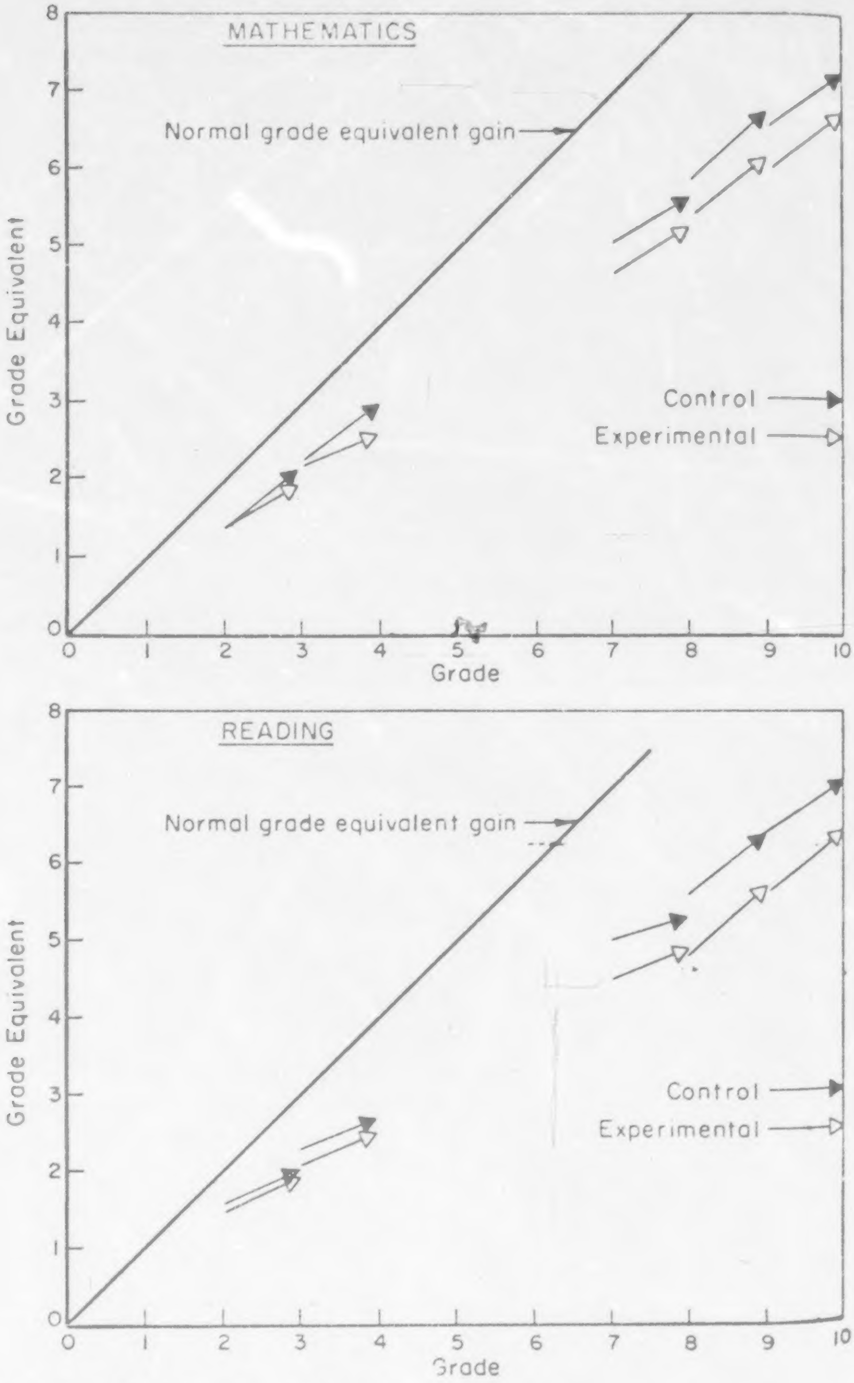
TABLE 7.10

Summary of Experimental-Control Comparisons Summed Over Sites
(OEO Experiment in Educational Performance Contracting)

Grade	Higher Experimental Scores		Higher Control Scores		No Significant Difference	
	Reading	Math	Reading	Math	Reading	Math
Grade 1	2	3	6	6	9	8
Grade 2	3	2	7	7	8	9
Grade 3	3	5	4	8	11	5
Grade 7	1	0	1	4	16	14
Grade 8	3	0	5	6	10	12
Grade 9	3	3	3	3	11	11
All Grades	15	13	26	34	65	59

FIGURE 7.11

Grade Equivalent Gains by Grade for Mathematics and Reading*



*Taken from Ray et al., 1972, p. 106 (Figure 3).

the percentage of minority group students ranging from 20% to 60%. Except for the Gary project, the contracts were limited to the content areas of reading and mathematics. General features of each of the projects are presented in Table 7.12. In general, the contractors guaranteed about one grade-level gain for one year of instruction.

Most of the projects used programmed materials to facilitate individualized instruction and self-instruction, and some of the projects featured teaching machines. Several of the projects also used special incentives -- e.g., extrinsic motivators and time in reinforcement centers.

Standardized achievement tests were the chief measures used for evaluating the effects of the projects. Table 7.13 presents the mean gains on standardized tests, where 1.0 would represent one year's growth. No control groups were used in this study, but Carpenter and Hall (1971) note that populations like those involved in the performance contract projects typically make yearly gains of about 0.5 to 0.7. Only Behavioral Research Laboratories in Gary and Combined Motivation and Educational Systems, Inc. (CMES) in Grand Rapids achieved their goals. While the latter project included Grades 6-9 and thus is not directly relevant, the Gary project included students in Grades 1-6.

Rand considered the possible reasons why Behavioral Research Laboratories were successful relative to other projects:

> The Gary program was different from the others in two important respects. . .First, because BRL was responsbile for the entire curriculum, it could concentrate heavily on reading and math. In fact, almost all of the first semester was spent in teaching these subjects. Second, parents of Banneker students evidenced much more involvement with their children's learning than did parents elsewhere. (Carpenter & Hall, 1971, p. 15)

The other projects "did not produce dramatic gains on standardized achievement tests, although in most instances gains were respectable" (p. 19).

With regard to the instructional processes, Rand reported that fear of "dehumanization" proved unfounded. Students working within a highly individualized system had to accept greater personal responsibility for their learning, and the programmed instruction fostered a reorganization of the classroom, with teachers and pupils engaging in more informal interactions.

In sum, performance contracting in this sample did serve to stimulate educational change and to focus attention on accountability, but the achievement gains were less than the performance contractors had expected. Hall et al. (1972) emphasize that this was a developmental year for most of the systems, with many attendant and unexpected problems. One year,

TABLE 7.12*

Features of the Eight Projects Studied by Rand (1971)

City and LSC[a]	Purpose	Performance Specifications	Payment Based On	Student Selection Criteria	Subjects	No. of Students (approx.)	Grades	Evaluation		
								Responsibility Of/Selected By	Responsible For	Method
Gary, BRL	(1) Improve student achievement at no additional cost to district (2) Demonstrate advantage of changed learning system for entire school	(1) 3-year students: perform at national norm level by program end (2) Others: one grade level per year in program	Math and reading achievement	All students in school	All	850[b]	K-6	(1) Independent evaluator paid by contractor/LEA (2) Auditor/LEA	(1) Evaluating design and testing (2) Computing LSC payment only	Standardized tests, reaction of students and parents, attendance, discipline records
Gilroy, WLC	Improvement in reading and math	One grade level increase per student per subject by year end	Math and reading achievement	All students assigned by LEA	Reading, math	100	2-4	Not mentioned	Not mentioned	Not mentioned
Grand Rapids, Alpha	Improvement in reading and math	(1) Grades 1-3: at least 0.75 grade gain (2) Grades 7-9: at least one grade gain	Math and reading achievement	Students performing lowest in reading and math on standardized tests	Reading, math	600	1-3, 7-9	Independent evaluator/OEO	Test administration, certifying program objectives; evaluating noncognitive aspects	Pre-, post-tests, questionnaires

TABLE 7.12 (Continued)

City and LSC	Purpose	Performance Specifications	Payment Based On	Student Selection Criteria	Subjects	No. of Students (approx.)	Grades	Evaluation		
								Responsibility Of/Selected By	Responsible For	Method
Grand Rapids, CMES	Improvement in reading and math	No minimum gain stated; CMES reimbursed roughly proportional to gain	Math and reading achievement	Students performing lowest in mutually acceptable standardized tests	Reading, math	600	6-9	(1) Independent evaluator/LEA (2) Testing company/contractor	(1) Validating grade gains (2) Miscellaneous evaluation	Pre-, post-tests
Grand Rapids, MLC	Improvement in reading and math	Students gain at least one grade level by year end	Math and reading achievement	All assigned by LEA (eventually the entire student bodies)	Reading, math	400	1-6	Not mentioned	Not mentioned	Not mentioned
Norfolk, LPA	Improve reading skills of students	(1) Students gain at least 1.7 grade levels (2) Each student passes 80% of his performance objectives	Gain scores on standardized reading tests (75%); interim tests of performance objectives (25%)	Grade level deficiency in reading determined by standardized tests	Reading	250	4-9	Independent evaluator/State Dept. of Education	Certifying student achievement for contractor payment	Standardized pre-, post-tests; interim tests of performance objectives

TABLE 7.12 (Continued)

City and LSC	Purpose	Performance Specifications	Payment Based On	Student Selection Criteria	Subjects	No. of Students (approx.)	Grades	Evaluation		
								Responsibility Of/Selected By	Responsible For	Method
Tex-arkana, Dorsett	Remove educational deficiencies of potential dropouts	One grade level increase per student per subject in 168 hours of instruction or less	Gain scores on standardized tests of math and reading	Students deficient in reading and math at least two grade levels but with an IQ of at least 75	Reading, math	350	7-12	(1) Independent evaluator/LEA (2) Independent auditor/LEA	(1) Evaluating design, management reports, test scoring (2) Critique evaluation (design, procedure), validating scores	(1) Observation, reports, meetings, manual scoring (2) Observation, review of reports, sample scoring
Tex-arkana, EDL	(1) Program dropout rate of 5% or less (2) Increase academic achievement of educationally deficient students (3) Increase cost effectiveness of instructional program	(1) Each student gains at least one grade level (2) Each student passes 75% or performance criterion-referenced items (3) Costs of instructional system decrease per student	(1) Math and reading scores on standard tests (75%) (2) Criterion reference measure (25%)	(1) An IQ of at least 75 (2) Students in Phase I who did not gain one grade level (3) 7-12 grade students with at least a two-level grade defiency in either reading or math	Reading, math	285	7-12	Independent evaluator, independent auditor/LEA	Same as above plus assuring test integrity	Same as above, plus evaluator reviews materials

TABLE 7.12 (Continued)

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*Adapted from Carpenter & Hall, 1971.

[a] Contractor abbreviations:

Alpha:	Alpha Systems
BRL:	Behavioral Research Laboratories
CMES:	Combined Motivation and Educational Systems, Inc.
Dorsett:	Dorsett Educational Systems, Inc.
EDL:	Educational Development Laboratories, Inc.
LRA:	Learning Research Associates
WLC:	Westinghouse Learning Corporation

[b] The entire school

TABLE 7.13

Mean Gains on Standardized Tests*

City	LSC	Test Used[a]	Mean Gains	Remarks
Gary	BRL	MAT	1.7/1.7	Reading/math, 1st grade
	BRL	MAT	0.7/1.2	Reading/math, grades 2-6
Gilroy	WLC	SAT	0.6	Reading--for contract payment
	WLC	SAT	0.8	Math--for contract payment
	WLC	MAT (Reading)	0.6	Regular district test
Grand Rapids	Alpha	Various	NR[b]	Test identification not released by OEO. Three tests used.
	CMES	EDS	1.2/1.0[c]	Reading/math
	WLC	MAT	0.7[c]	Reading/math
	WLC	MAT	0.6[c]	Math
Norfolk	LRA	Various[d]	0.1	5th grade
	LRA	Various	0.5	7th and 9th grades
Texarkana	Dorsett	ITBS	NR	Arkansas
	Dorsett	SRA	NR	Texas
	EDL	ITBS	0.5/0.3	Arkansas and Texas, reading/math, grades 6-12

[a] Test abbreviations:
MAT: Metropolitan Achievement Test
SAT: Stanford Achievement Test
EDS: Educational Development Series, Scholastic Testing Service
ITBS: Iowa Test of Basic Skills
SRA: Science Research Asscciates Achievement Tests

[b] NR: data not released.

[c] Mean gains for those students who attended at least 150 days and for whom pre- and post-test scores are available.

[d] Three tests used at each grade, chosen from SAT, MAT, ITBS, California Achievement, and Stanford Reading Achievement. Means computed only for students who took both a pre-test and a post-test.

*Taken from Carpenter and Hall, 1971, p. 14 (Table 4).

especially when it is the first year, does not yield a good assessment of the effectiveness of a project. Furthermore, standardized achievement tests may simply not be gauging the impact of the project accurately. The limitations of these tests have been discussed previously; estimates of a project's value are extremely limited here as elsewhere by the instruments available to measure individual development in various areas.

The importance of program management was also discussed by Hall et al. (1972). "One point that stands out in each of the five case studies is that the successes, failures, and problems associated with each program were intertwined with the personal characteristics of the people in charge and the intensity of their commitment to the program" (p. 31).

The Guaranteed Student Learning Program (Institute for Development of Educational Auditing, 1971). The Guaranteed Student Learning Program was conducted in Providence, Rhode Island, in 1970-1971 with 1500 student participants in Grades 2-8. The primary goal of the project was to raise standardized reading scores of students who were at least one grade level behind in reading, but criterion-referenced tests were also used. The curriculum is not described in the final report. The project was intended to be implemented uring the entire year, but it was December before the project became operational. Thus the actual instructional period was reduced to around 105 school days.

Less than half the pupils involved had valid pre-test and posttest scores on standardized tests and met the attendance requirements. The overall reading gain on the Gates-McGinitie Reading Tests was .7 years for the 692 pupils included in the calculation. This gain did not meet the goal of 1.0 year gain; however, the project was not in effect as long as anticipated. Average payment to the contractor, based on achievement gains, was around $25.00 per pupil -- about half the amount of estimated costs for the project.

Project Impact (Institute for the Development of Educational Auditing, 1971). Project Impact is funded by the Duval County School Board and Title I (ESEA) to improve academic achievement and skills in reading, writing, math, science, and social studies. A performance contract was undertaken with Learning Research Assoicates. From January to June, 1971, 500 first graders were involved; the project is now being expanded to about 1050 first and second graders.

The curriculum is based on an "Inquiry" method of instruction; in general the focus seems to be on "learning how to learn", "thinking skills", and self-awareness rather than on memorizing factual information; it would be termed cognitively-oriented within our ~~taxonomy~~. Students are considered responsible for their own learning, and the leader serves as a guide to help the children in their self-chosen activities. The role of the teachers is considered vitally important to the success of the project.

TABLE 7.14
ORGANIZATIONAL CHANGE
PERFORMANCE CONTRACTING

roject	Year of Inia-tion	Rep-li-ca-tions	N	Grades	Student-Teacher Ratio	Time	Main Features	Parent Involve-ment	Design	Tests	Results	Approx-imate Costs
uaran-eed tudent earning roject hode sland	70		1500	2-8			Performance contracted remedial reading; academic goals		Pre-post	Gates-MacGinitie	Rate of gain about 1.0, but goal of contracter not met	$25 (contract not fulfilled)
roject pact lorida lso A	70		1971: 300 1972: 1050	1-2	30:1 30:1	sd 5 days sy	Performance contract, inquiry approach; cognitive goals	Some program evaluation	Pre-post Controls	Not identified	No difference between experimental and controls in reading and math, but exp. showed greater increases in IQ scores	$200 (70-71)

Standardized test results (tests not identified) indicated that Impact pupils performed as well as controls in reading and math and showed greater increases in IQ scores. Gains varied greatly across teachers. Learning Research Associates did not completely attain their goals, but they were quite optimistic concerning prospects for the second year of operation.

Summary. It would be premature to form definite conclusions about the effectiveness of performance contracting at this time. For most federally funded projects, the available data cover a single instructional year, an insufficient and unrealistic amount of time to provide conclusive results. Performance contracting is a major change in the structure of the educational system, and the introduction of such a potentially important change could be expected to be accompanied by a great deal of initial confusion. Thus we could not necessarily expect any beneficial impact to show up immediately. Data from the first year of implementation simply do not provide a sufficient evaluation of the possibilities.

In general, performance contracting projects are more expensive than conventional instruction but cost the same (or less than) typical remedial programs funded by Title I. Performance contracting programs tend to spend money on paraprofessionals, materials, and equipment rather than on highly trained teachers (Carpenter & Hall, 1971).

As a change force performance contracting has had some success in introducing new materials and methods. Moreover, performance contracting has placed more emphasis on educational accountability and has required schools to clarify goals and develop techniques for analyzing results. Partially as a side effect, functions such as planning, management, quality control and evaluation have become areas of public interest, particularly within school systems.

Carpenter and Hall also note three current problems. First, the complexity of some performance contracting programs has unnecessarily increased costs and made management difficult. Second, the difficulties in defining objectives and measuring attainment of them narrows the range of areas conducive to performance contracting efforts. Finally, performance contracting has exacerbated problems of teacher status, management skills, and test selection and administration. The last problem, though, may constitute an advantage in the long run if viable solutions to the issues can be found.

Busing

Busing to achieve desegregation is an organizational change motivated by political as well as educational rationales. Because the issues surrounding busing are so complex, we have conducted a literature review to document the most recent findings and arguments. The review focuses primarily on desegregation as a strategy to improve the education of black students. It considers the effects of desegregation on school achievement and on attitudes, perception, and behaviors thought to be related to environment.

The review is presented in Appendix IIA, and a summary is presented below. The reader is advised to consult the Appendix in order to judge the strength of the conclusions for himself. Before presenting the summary, however, one of the better evaluations of the effects of busing on participating children will be described.

Project Concern, Hartford, Connecticut (Wargo et al., 1971). Project Concern began busing randomly selected children from 85% nonwhite city schools to suburban schools in 1966. Since that time the project has been replicated in New Haven and Bridgeport, Connecticut. Project Concern buses inner-city disadvantaged children to predominantly white suburban schools and send supportive teams consisting of one teacher and one mother from the inner-city area to each receiving school. The teachers serve as regular classroom teachers or provide remedial instruction while the parent volunteers serve as paraprofessionals and ride with the children on the buses.

An original evaluation of Project Concern indicated that kindergarten through third grade experimental children made greater WISC IQ gains than a control group. The opposite was found with fourth graders, and no differences were found between fifth grade experimentals and controls. Reading and mathematics achievement scores (Primary Mental Abilities) followed the same pattern except that control groups scored higher than experimental groups in both fourth and fifth grades.

In 1970 a three-year summary evaluation used reading achievement scores from six different reading tests. Usable test results were available for only about one-half of the students. Project Concern first-graders were somewhat ahead of grade-level expectations, while second, third, fourth, and fifth graders were all behind grade level expectations. The size of the lag increased as grade level increased.

Children who had been in the project for three years were not as far behind grade-level expectations as children who had been in the project for one and two years. These data are possibly confounded, however, because some children dropped out of the project. "Comparisons made against

TABLE 7.15
ORGANIZATIONAL CHANGE
BUSING

roject	Year of Inia-tion	Rep-li-ca-tions	N	Grades	Student-Teacher Ratio	Time	Main Features	Parent Involve-ment	Design	Tests	Results	Approx-imate Costs
roject ncern nnec-cut	66	2	260	K-6	25:1	sd 5 sy	Busing with 1 teacher and 1 mother to better schools		Pre-post Control	WISC	1967-68: Experimental IQ gains greater than control in grades K-3	
										Primary Mental Abilities	Experimental gains in reading and math greater than control	$1473 inc.
										6 different Reading Tests	1970: Data incomplete; Grade 1 ahead of grade-level, but Grades 2-5 all behind; only slightly ahead of inner-city peers	
										California Achievement Test	Replication: Conn. (n=25) Rate of gain around 1.0; outperforming inner-city peers	

'validated inner-city' norms show that at the end of the fourth grade, program children were .11 grade-equivalent units less retarded than their inner-city peers (-1.12 vs. -1.23). At the end of the fifth grade, the difference was .39 grade-equivalent units (-1.04 vs. -1.43). The statistical significance of these differences has not been assessed." (Wargo et al., 1971, p. 258)

Wargo et al. (1971) note that the statistical significance of benefits has not been established. Even if they were statistically significant, they could not be considered educationally significant. "If any academic achievement is to be attributed to Project Concern, it would be primarily in the area of reading, primarily for children in earlier grades, and primarily for children who remain in the program for more than two years." (p. 258)

The only published evaluation of the New Haven and Bridgeport replications covers only 25 children in a suburb of New Haven. Scores on the California Achievement Test over a 17-month period indicated that Project Concern children were progressing at the month-for-month expectation for average children in all three subtest areas and were scoring significantly higher than their inner-city peers.

Summary of Desegregation Review

1. Proponents of desegregation expect it to substantially raise black achievement.

2. Black students in desegregated schools and classrooms perform better on standard achievement tests than do black students in segregated schools and classrooms. This performance advantage is not explained away by differences on individual social class as that is presently measured, nor is it explained away by differences in school resources.

3. The advantage of desegregated students is principally but maybe not exclusively associated with the higher social class composition of white schools.

4. Desegregation appears to benefit lower as well as middle-class black achievement, but not quite as much.

5. Classroom desegregation, not school desegregation, affects black achievement.

6. Desegregation has greater impact on younger students.

7. Desegregation is cumulative in its impact. Maximum effect results from early desegregation.

8. The effect of desegregation on black achievement is educationally important, but would not substantially reduce racial inequality in achievement.

9. Studies of early busing programs do not support the results of survey analysis which show a positive effect of desegregation on black achievement. This may be because of the students' ages, the short duration of the programs under study, and the failure of bused students to be genuinely integrated into the school community.

10. Desegregation may have a positive effect on black educational attainment and on the quality of higher education blacks receive.

. Desegregation is positively associated with measurement of black "fate-control" which in the EEOS (Coleman's 1966 Equality of Educational Opportunity Study) is a major determinant of black achievement.

12. There is little apparent effect of desegregation on black educational or occupational aspirations.

13. Survey analysis suggests a positive effect of desegregating on black attitudes about race relations. Busing studies do not evidence such an effect.

14. There is no clear cut evidence about the effect of desegregation on white achievement. Reanalysis of the EEOS northern elementary sample showed that there was no negative effect. A survey in California concluded the opposite.

Education Vouchers

Education vouchers are an organizational change which would make parents the decision-makers in deciding which school their children should attend. Voucher plans would provide parents with scrip worth a certain amount of money to "spend" on their children's education. The first demonstration of a voucher program will begin in September, 1972, in Alum Rock, California, a district of San Jose. Six public schools with an approximate enrollment of 3600 pupils will participate, and the program will eventually include the entire district, approximately 15,000 pupils. The Alum Rock District is among the poorest in San Jose: 60% of the school enrollment is Chicano, and a small percentage is Black. Enabling legislation has also been passed in Connecticut permitting the institution of a demonstration voucher program which may begin during 1973-74.

A carefully regulated and monitored voucher program is of special interest because its advocates (Jencks et al., 1970b; Areen and Jencks, 1971) predict greater specific benefits to disadvantaged students at no more cost. Voucher systems emphasize accessibility rather than control. Thus, a child could attend any school his parents choose, public or private, provided that school: (1) accepts the voucher as full payment for tuition; (2) accepts any applicant so long as it has vacant places; (3) accepts uniform standards established by the local educational voucher agency (an LEA or similar body) regarding suspension and expulsion of students; (4) agrees to make a wide variety of information about its facilities, teachers, program and students available to the educational voucher agency and to the public; and (5) meets existing state requirements for private schools regarding curriculum, staffing, etc. Half of such vacant places would have to be filled randomly, and the other half filled so as not to discriminate against ethnic/racial minorities. Schools that accepted children from low income families would receive additional incentive payments -- for example, the maximum payment for the poorest child might be double the basic voucher. This, however, is only one of several possible ways to handle the specifics of voucher plans.

Thoughtful critics of voucher programs point out that the risks of implementing such a program, even on a demonstration basis, far outweigh the gains. Specifically, La Noue (1971) suggests that most parents are not liberal, equalitarian and integration-minded and therefore would actively seek to convert a voucher program into a license for unregulated, noncompensatory and segregated education. A voucher experiment should be carefully monitored and evaluated; the need for this procedure is clear and explicit as a result of the public controversy surrounding the voucher issue.

A Note on Follow Through

Follow Through, initiated in 1967, is a project for disadvantaged children from kindergarten through third grade. It is intended to be a comprehensive project offering educational, medical and dental, nutritional, social, and psychological services to children previously enrolled in Head Start. Follow Through uses a strategy of "planned variation" in approaches to early elementary education, and 20 different approaches are now being implemented in Follow Through sites throughout the nation. The Follow Through project represents a major test of the viability of exporting models, some of which have been effective in experimental sites, to other locations to be implemented by individuals other than the initiators.

During 1969-1970 the Stanford Research Institute undertook the first nation-wide evaluation of Follow Through. At this time, 14 models were in thei second or third year of evaluation and were included in the analysis.

SRI grouped the fourteen different approaches into five categories according to their primary emphases. The structured academic approaches included models which emphasized teaching academic information through the use of programmed instructional techniques. The projects included in this category were (1) Individually Prescribed Instruction and the Primary Education approach, (2) the Behavior Analysis approach, (3) the Mathemagenic Activities Program, (4) the Language Development-Bilingual Education approach, (5) the Responsive Environments model, and (6) the Systematic Use of Behavioral Principles project. Discovery approaches, the second group of sponsors, try to promote the development of autonomous, self-confident learners; they emphasize exploration and discovery by the child rather than the acquisition of specific information. The Bank Street College of Education, the Education Development Center, and the Responsive Environment models are considered discovery approaches. The cognitive discovery approaches focus primarily on cognitive processes such as reasoning, classifying, and counting. The models comprising this category are more diverse than the models in the preceding two, and techniques include direct teaching of specific skills, discovery, and verbal activities. The cognitive discovery models are (1) the behavior oriented Prescriptive Teaching approach, (2) the California process model, (3) the Cognitively Oriented Curriculum model, (4) the Cultural Linguistic approach, (5) the Florida Parent-Educator model, (6) the Hampton Institute nongraded model, (7) the Home-School Partnership, (8) the Interdependent Learner model, and (9) the Tucson Early Education model.

The self-sponsored approaches are similar not necessarily in goal orientation or in instructional process but rather in their sponsorship by the local school district staff. Finally, the parent-implemented groups are also similar in their sponsorship; they are run by parents not affiliated with any particular instructional model.

At this time the evaluation data must be considered highly tentative, but we shall present below some of the major results reported by SRI on the first evaluation:

> Follow Through children made somewhat greater gains in achievement during the school year than did non-Follow Through children. The differences, although small in absolute magnitude, were statistically significant in both the kindergarten and first grade samples.
>
> Effects of Follow Through on achievement were greatest for children whose families were definitely below the Office of Economic Opportunity poverty line. Both kindergarten and first grade Follow Through children from these families made gains in achievement larger than those of comparison children. Again, differences were small in absolute size but were statistically significant at both grade levels.

> Follow Through's effects on achievement were largest in magnitude and most consistent in Structured Academic approaches --those approaches emphasizing the teaching of academic information through sequentially structured activities and frequent extrinsic reinforcement. The differences between achievement gains of Follow Through children in these approaches and comparison children were statistically signficnt at both kindergarten and first grade, although the absolute size of differences in achievement between Follow Through and non-Follow Through children were found at either kindergarten or first grade (but not both) in other approaches, with all of these findings favoring Follow Through children. (U.S. Department of Health, Education, and Welfare, 1972, p. 103)

Some measures of attitudes toward school and learning were also used, but the instruments were not standardized or normed. The measures consisted of asking questions and requesting children to indicate their responses by marking a smiling face, a neutral face, or a frowning face.

These data offer some reason for hope that further evaluations will show gains, but they do not offer much more. There are enough problems with the data and with the 1969-1970 evaluation that it would be improper to draw any conclusions on the basis of our current information (J. David, Huron Institute Follow Through Project, personal communication). The HEW 1972 report on compensatory education notes that these results are interpreted by some as indicative of Follow Through success. But others stress the small absolute differences between Follow Through and non-Follow Through children and consider that success has not yet been realized. Significant results attained with large numbers of subjects do not imply educational significance for individual children.

A Note on Title I

Title I of the Elementary and Secondary Education Act (ESEA) of 196[illegible] authorized financial assistance to local educational agencies with a high concentration of low income families to enable local agencies to develop compensatory education projects and related services for the disadvantaged children. The local educational agencies were responsible for designing and implementing local Title I projects. The American Institute for Research (Wargo et al., 1972) has attempted to evaluate the effects of ESEA Title I projects from fiscal year 1965 through 1970. In addition to summarizing effects, they discussed administrative structure, management performance, operational context, national needs, and Title I resource allocation. Two conclusions that emerged from the latter discussions must be considered simultaneously with the evaluation data.

1. Title I has never been implemented in full compliance with enabling legislation and associated regulations.

> 2. All evidence suggests that Title I funds and services have been underallocated for remedial instruction, overallocated cated for supportive services, and misallocated to children teachers judged to be without critical needs for compensatory services (p. 165).

Wargo et al. reviewed all available data sources and summarized, at three levels (national, state, and local) the cognitive and noncognitive benefits resulting from participation in Title I projects.

Cognitive Benefits. Only the teacher ratings of student achievement reported in the FY 69 Survey of Compensatory Education are representative of achievement of children in Title I schools nationwide. Standardized achievement test data were also reported in the FY 68 and FY 69 Survey of Compensatory Education, but they are not representative of nationwide effects. In both, large urban districts were overrepresented.

During 1969, second, fourth, and sixth grade students, participating and not participating in compensatory academic projects in Title I schools were rated by teachers in six areas: reading, math, understanding written instructions, understanding oral instructions, oral expression, and independent learning. Table 7.13 summarizes the results of the survey. A larger proportion of participants than of nonparticipants were rated as showing improvement. Nevertheless, between 22 and 36 percent of the participants were rated as "needing but not obtaining" benefits from participation in the projects.

In the FY 68 Survey, reading achievement data for only 9 percent of the total sample were available for analysis, and these data were reported in a narrative form. The participants had lower pre-test scores than nonparticipants, demonstrated no improvement in rate of reading progress, and were farther behind nonparticipants at the end of the year than at the beginning. The grade-equivalent scores of both participants and nonparticipants in Title I schools fell farther behind national norms at each succeeding grade.

The FY 69 Survey (Glass, 1970) used the following tests:

Grade Level	Test
2	Metropolitan Achievement Test Stanford Achievement Test
4	Metropolitan Achievement Test Iowa Tests of Basic Skills
6	Metropolitan Achievement Test Iowa Tests of Basic Skills Stanford Achievement Test California Achievement Test

TABLE 7.16

Teachers' Ratings of Compensatory Academic Program Participants and Nonparticipants in Six Areas of Academic Proficiency, FY 69*

	Type of Change in Pupils' Proficiency					
	Some for Worse %	None but Desirable %	None but Not Needed %	Some for Better %	Large for Better %	No Response %
Reading						
Participants	2.0	22.0	5.1	58.6	9.4	2.9
Nonparticipants	1.3	15.6	21.5	49.0	9.5	3.1
Math						
Participants	2.5	25.2	7.2	49.9	8.3	6.9
Nonparticipants	2.1	18.0	20.1	47.2	9.0	3.6
Understanding Written Instructions						
Participants	1.5	31.2	13.8	44.9	5.5	3.1
Nonparticipants	1.1	18.0	34.5	37.6	6.6	2.2
Understanding Oral Instructions						
Participants	1.4	24.1	17.4	48.7	6.0	2.4
Nonparticipants	1.1	15.6	38.2	37.0	6.0	2.2
Oral Expression						
Participants	1.1	27.8	12.4	48.9	6.5	3.3
Nonparticipants	0.9	20.6	26.2	43.2	6.6	2.5
Independent Learning						
Participants	2.2	36.2	10.0	40.8	7.1	3.7
Nonparticipants	11.4	22.3	26.1	37.8	9.2	3.3

* Glass, 1970; reported in Wargo et al., 1972, p. 169 (Table 7.1).

Data were presented in the form of discrepancy scores, computed by subtracting each pupil's test score in grade equivalent units from his grade level at the time he took the test. Table 7.17 presents the percentage of participants and nonparticipants performing below grade level on the pre- and posttests. The table indicates that neither group improved much in reading achievement. An additional analysis using residual gain scores found that nonparticipants made larger gains than participants.

At the state level, Wargo et al. found that only 7 of 91 State Title I evaluation reports in FY 69 and FY 70 provided data that were both representative of the state and that could be meaningfully combined.

> The mean average monthly gain across those states at grades two, four, and six was approximately a month-for-month, a gain sufficient to arrest achievement retardation but not large enough, even if prolonged, to bring those children to grade level. Also from those 91 state reports, 5 states were identified that reported data on a total of 55 projects that produced grade-equivalent gains greater than month-for-month. Clearly, as the unit of analysis was narrowed from the nation as a whole to states and then to projects within states, more signs of positive impact on participating children could be identified. (1972, p. 179)

At the project level, they rely on the earlier AIR reviews of compensatory education. These reviews identified 41 projects conducted between 1963 and 1971 that had resulted in cognitive benefits for participating children. Wargo et al. report that 20 of the 41 successful projects had used Title I funds to defray part or all of the costs. Additional characteristics of the "successful" projects include:

(1) Of the 41 projects, 37 served children from urban areas and 4 those from suburban areas: "Many rural school systems apparently lack the capabilities necessary for conducting sound evaluations and/or publishing their findings "

(2) "The number of students served by any one successful project in a single year ranged from 15 in a preschool project to 30,000 in an elementary school system."

(3) "As with Title I projects nationally, most of the successes served children in the early elementary grades or preschool, with the number of projects decreasing at successive grade levels."

(4) "Each of the 41 projects stated or implied having cognitive objectives that were directly related to improvement in student IQ or achievement."

(Excerpts are from pp. 181-182)

TABLE 7.17

Percentages of Participants and Nonparticipants Scoring below Grade Level on Reading Pretests and Posttests*

Grade	Status	N	% Below on Pretest	% Below on Posttest	Difference
2	Participant	486	78.6	78.8	0.2
	Nonparticipant	1,719	47.3	45.0	- 2.3
4	Participant	593	86.3	89.9	3.6
	Nonparticipant	2,089	58.2	65.4	7.2
6	Participant	443	90.1	91.0	0.9
	Nonparticipant	2,438	64.4	64.3	- 0.1

* Glass, 1970; reported in Wargo, et al., 1972, p. 172 (Table 7.3).

Personal and Social Development

The best data on the personal and social development of children attending Title I schools was provided by FY 69 Survey of Compensatory Education. These data, however, are comprised entirely of teacher ratings and were collected on children in compensatory projects in Title I schools regardless of whether the projects were funded through Title I or some other source. The teacher ratings were made on participants and nonparticipants in academic compensatory projects. The results of these ratings are summarized as follows:

> During FY 69, teachers rated personal and social development of participants and nonparticipants in academic compensatory programs conducted in a representative sample of Title I schools. In terms of personal development, the percentage of pupils showing improvement was four to five points higher for participants than for nonparticipants in the following areas: self-concept, accuracy of self-evaluation, educational aspirations, reduction of anxiety, liking of the teacher, attendance, and dress habits. The percentage of participants who showed improvement in completing assignments and care in handling property was about 10 points higher than for nonparticipants. No significant difference was reported between the two groups of students in improvement in creativity or in awareness of current events. Apparently, the only large differences were in the areas of completing assignments and care in handling property, both of which favored participants. The data also showed, however, that there was much more need for improvement among participants than among nonparticipants even after a year in the program.
>
> In regard to improvements in social behavior, more participants improved than nonparticipants in all areas rated; namely, relationships with adults, attentiveness, and disruptive behavior. It appears that more participants than nonparticipants in compensatory academic programs improved in their personal and social behavior. Also, the effect seems to be the stronger in the area of social than personal development, but in all cases, the percent showing improvement was only approximately 10 points greater among participants than nonparticipants. Clearly, more participants in compensatory academic programs have demonstrated some improvement in personal and social development than have nonparticipants; however, the differences between the two groups are quite small -- especially when considered in terms of the greater potential for improvement among participating children. (1972, p. 167)

Discussion and Summary

In the course of our attempts to determine the effectiveness of compensatory projects in early elementary school (Grades 1-3) we have reviewed evaluations of individual projects and major surveys of the literature. A number of surveys have formulated conclusions concerning compensatory projects at all ages (preschool-secondary school), but in addition have given some descriptions and evaluative data of individual projects at each age level (Hawkridge et al., 1968; Hawkridge et al., 1969; McDill, McDill,& Sprehe, 1969; Wargo et al., 1971; Wargo et al., 1972). We have relied quite heavily on the extensive surveys conducted by the American Institutes for Research (AIR). These surveys present descriptions and evaluations of the most successful projects to date. Both the Center for Educational Policy Research at Harvard University and AIR have reviewed Title I projects, and the Stanford Research Institute has published an initial evaluation of Follow Through.

It is important, while considering the results of these compensatory projects, to remember some of the major limitations pointed out in the beginning of the chapter. First, most of the evaluative data are limited to the cognitive realm. Second, a project that is successful one year may not be successful the next year. Wargo et al. (1971) reported that only 64% of all compensatory projects which provided usable data continued to be successful in the years following the year of their identification as "successful" by AIR. Of the elementary projects, 50% (3 of 6) continued to be successful. Third, the status of the participants two or three years after participation in the projects has rarely been assessed. We have very few follow-up studies which indicate whether or not gains made in compensatory projects are maintained.

Effects of Compensatory Education Projects

Table 7.18 provides a summary of the short-term effects of early elementary compensatory projects. Few successful projects exemplify the category "amplification of traditional services." Indeed, most Title I projects fall into this category, and the small number of successes relative to the large number of such projects is quite notable. The successful projects which do exemplify this category are different from regular classrooms in a variety of ways, and it is not obvious precisely why these projects were successful when others were not. As was pointed out previously, however, all of the projects did focus to some extent on individual instruction based on the child's needs.

Several subcategories were included in the category "reorganization of classroom process." One subcategory involved the implementation of a new curriculum and new instructional strategies in a specific content area, most frequently reading and language. Children participating in these projects with an academic goal orientation generally gained more than controls or made more than one month's gain for each month of instruction. Only two of the specific curriculum components identified were cognitive in their orientation. One of these has been successful, but while initial evaluations showed the second to be successful, later evaluations have been equivocal.

Computer-assisted instruction has been much discussed, but data on its use at the elementary level are limited. Two projects developed at Stanford -- one in reading and one in math -- were successful in improving achievement test scores. There is some indication that CAI may be quite effective in providing drill and practice, especially to students who may require more practice than others. CAI appears quite promising, but more evidence on its effectiveness and on CAI-student interactions is needed.

Instructional television has been the focus of several major reviews (Allen, 1971; Chu and Schramm, 1967; Saettler, 1968). In general it appears to be about as effective as traditional instruction but, as it has been used, no more so -- except in the number of students reached. "The Electric Company" has not yet been evaluated, but preliminary information suggests that it is being enthusiastically used in classrooms.

Data on the effectiveness of overall classroom reorganization have come primarily from projects with an academic goal orientation. These projects seem to be effective in increasing performance on standardized achievement tests, and some have even raised performance above the norm. In additon to their academic goal orientation, they are highly structured, employing behavioral objectives and principles of behavior modification. Information on the effectiveness of the projects has come from their initial implementation, though, and it remains to be seen whether the projects can be successfully implemented and produce the same results at other sites. (Follow Through evaluations will provide some relevant information on project exportability.) Furthermore, studies are needed which investigate the permanence of the gains made in the early elementary compensatory projects.

Data are presented on only one cognitively-oriented classroom project, and the findings are equivocal. No data have been presented on the effects of adjustment-oriented classroom models.

The major organizational changes discussed included busing, educational performance contracts, and parent-mediated projects. Busing studies have been poorly conducted to date, but overall they show no consistently positive effects of busing on achievement measures of the bused children. Jencks et al. (1972) reviewed and reanalyzed data from survey comparisons of desegregated and all-black schools. They concluded that "taken together these surveys suggest that black students educated in desegregated elementary schools score 2-3 points higher on standardized tests than similar black students educated in all-black schools" (p. 203). These effects, however, seem to depend on a variety of factors, including the length of time the school has been desegregated, the disruption concomitant with desegregation, the proportions of blacks and whites, and the particular grades, kinds of students, and type of schools. Reviews of busing studies show no consistent effects.

TABLE 7.18

Summary of Short-Term Effects of Early Elementary Compensatory Projects

Classroom Process

1. Amplification of Normal Services

    A. Academic Goal Orientation: Few of these projects produce gains greater than those of a control group or a rate of gain equal to or greater than "normal" (one month gain for one month of instruction) on standardized achievement tests. The small proportion of such projects that are successful differ in a number of ways from the traditional classroom, and it is not known which components of the project are responsible for its effectiveness.

    B. Cognitive Goal Orientation: No projects

    C. Adjustment Goal Orientation: No projects

2. Reorganization of Classroom Process

    A. Academic Goal Orientation

        1. Changes in Specific Content Areas: Most of these projects focus on reading and language and emphasize individual diagnosis and instruction. Participating children generally perform more adequately than controls on posttests or made larger than month for month gains on achievement tests. However, children in fewer projects met "average" grade level expectations on achievement tests.

        2. Computer-Assisted Instruction: Only two projects providing data exemplify this category; both were successful in increasing performance on achievement tests.

        3. Instructional Television: ITV appears to be as successful as traditional instruction, but no more so. However, The Electric Company, which uses different strategies than do most other ITV projects, has not yet been evaluated.

        4. Overall Classroom Reorganization: The data currently available on these projects indicate that they significantly increase scores on achievement tests. Participants on the average score higher than controls, and in some cases have performed at grade level or above.

B. Cognitive Goal Orientation: Insufficient data are available to make even a tentative judgment about effectiveness. Few specific curricular changes, CAI, or ITV projects have adopted primarily cognitive goals, and few evaluations of cognitively-oriented classrooms at the elementary level are available. Two cognitively-oriented changes in specific content areas were identified; one was successful and the other was successful for one year but not the following.

C. Adjustment Goal Orientation: Insufficient data are available to make even a preliminary judgment about effectiveness.

Organizational Change

1. Performance Contracts: In general, studies of performance contracting projects during their first year of operation show no consistent increases in academic performance. First year effects may not be indicative of possible later effects, however.

2. Parent-Mediated Projects: McLaughlin (1971) reports that successful projects tend to be projects with parental involvement, and that parent training projects (which focus on teaching specific skills) can be successful in changing parental attitudes toward themselves, their children, and the school. One elementary school project reviewed here indicated positive effects of parent training on child achievement; evaluations of the Follow Through parent-mediated models have not yet been published.

3. Busing: Busing studies indicate no consistently positive or negative effects on achievement measures of bused children.

> If these studies are taken in isolation, none of them proves very much. When they are taken together, they seem consistent with our conclusion that desegregation results in small average gains in black achievement if it continues over a fairly long period. But these gains are usually small, and they depend on factors that nobody fully understands. (p. 205)

Averch et al. (1971) reviewed the effect of peer-group influence, with integration being "a particular variant of peer-group influence insofar as educational effectiveness is concerned" (p. 41). After reviewing several major studies (including the Coleman Report and its critiques), Averch et al. came to four conclusions concerning a "student-body" effect on achievement:

> 1. There is no strong evidence that student-body effects exist. In particular, there is no evidence that the racial composition of a student body affects the performance of individual members of that student body. . .
>
> 2. There is no strong evidence to the contrary. Many researchers have argued that alternative and more likely hypotheses could have led to the results' being interpreted as student-body effects. But no researcher has shown that student-body effects do not exist. . .
>
> 3. There is no evidence in the production-function literature that student-body effects might be negative. . .
>
> 4. The entire controversy over the existence of student-body effects and the absence of conclusive empirical results stem from the data problem described earlier. So long as production-function research is based on data generated by natural experiments, it will be difficult, if not impossible, to isolate completley the relative contributions of school resources, background factors, and peer-group influences. (pp. 43-44)

Educational performance contracts have not yet been adequately evaluated. Two major studies have been done, one by Rand (Carpenter and Hall, 1971; Hall et al., 1972) and one by Battelle Columbus Laboratories (Ray et al., 1972). In both studies the overall results did not show an increase in academic performance as result of the projects implemented by the performance contractors. Most of the performance contracting projects were highly structured (with heavy emphasis on individualized diagnosis and instruction) and focused on academic objectives (especially reading and mathematics). It must be noted, however, that the data typically indicated the effectiveness of the projects during their first year of operation. Such a major change as performance contracting would be expected to require some time for effective implementation and operation, so it seems fair to reserve judgment on its effectiveness, and on the curricula and instructional strategies used, until at least the second or third year of operation. Follow Through models, for instance, are not evaluated during their first year of implementation.

In parent-mediated projects it is difficult to separate the effects of parent training from those of other aspects of the projects. McLaughlin (1971) has noted that successful projects and parental involvement tend to covary together. But she found that parent training projects, in which parents learned specific skills for teaching their children, appeared more consistently successful in changing parental attitudes (toward themselves, their children, and the school) than did parent participation projects, in which parents were involved in more school activities but not taught specific skills. It should be noted that these parent participation projects would not have been included in our category or organizational change. Only one elementary school project reviewed here (the Flint, Michigan School and Home Program) has provided data showing positive effects of parent training. Evaluations of the Follow Through parent-mediated models have not yet been published.

Findings from the large-scale evaluations of Title I and Follow Through were briefly presented. After a review of all evaluation data on ESEA Title I from Fiscal Year 1965 through 1970, Wargo et al. (1972) concluded that the national evaluations provided little evidence of a positive impact on eligible and participating children. At the state and local level, however, some data indicated positive benefits of participation in Title I projects. Nevertheless, the proportion of projects producing benefits was small. Jencks et al. (1972) summarized Title I projects and their effects as follows:

> Title I programs are worse than the status quo as often as they are better. . . These findings are not altogether surprising. These programs have often been poorly managed Sometimes the funds have been misspent. Often they have been widely diffused. Their aims are typically hard to pin down. Most announce improved reading or mathematics achievement as their principal goal, but many also seek to improve students' self-concept, eliminate truancy, prevent drop-outs, improve school-community relations, increase parent involvement, or prevent falling arches. Very few of these programs have done anything radically new. Most assume that what disadvantaged children need is pretty much what they have been getting, only more; more teachers, more specialists, more books, more audio-visual devices, more trips to museums, and so forth. The quality of children's experience is seldom changed, so we should not expect the result to change. (p. 186)

After their review of all phases of Title I, Wargo et al. (1972) concluded that Title I had never been adequately implemented.

> The national-level data that indicate a disregard for Title I regulations, guidelines, and program criteria suggest that ESEA Title I has never been implemented nationally as intended by Congress. Consequently, the failures in regard to resource allocation and impact cannot be directly attributed to the enacting legislation. Rather, those failures must be attributed to a program that was modeled after ESEA Title I but has never been implemented in full compliance with existing regulations, guidelines, and program criteria. Full compliance to enacting legislation will be required before the national compensatory education program intended by ESEA Title I can be fairly assessed. (pp. 9-10)

Only the first evaluation of effects of Follow Through models has been released. Because of the small differences found between experimental and control groups and because of some problems in the analyses, conclusions regarding the effectiveness of Follow Through should await future evaluations.

Summer School

The projects described in this chapter have primarily been implemented during the academic year. However, it has recently been suggested that summer school projects might have a significant positive effect on the achievement of disadvantaged children (Bissell, personal communication; Shapiro, Bresnahan, and Knopf, n.d.). The popularity of summer school for remediation or "enrichment" has been increasing during the 1960's, and since the implementation of Title I many summer school enrichment projects have been available on a no-fee basis (Austin, Rogers, and Walbesser, Jr., 1972). The recent suggestions to focus on summer projects in compensatory strategies, however, are based on data which show that high SES children presently gain more on achievement test performance during the summer than do low income, disadvantaged children.

Hayes and Grether (1969) analyzed scores on the reading and word knowledge subtests of the Metropolitan Achievement Test of second through sixth grade students in over 600 elementary schools in New York City. Data over a two-year period were obtained; tests had been administered in October and May of 1965-66, and September and April of 1966-67. About one-half of the children were white, one-fourth black, and one-fourth Puerto Rican. Hayes and Grether rated the economic condition of the children in the schools by the proportion of students eligible for the free lunch program, and they divided children into six groups on the basis of proportion white and proportion receiving free lunches. Set I schools were primarily non-white with 63% of the children qualifying for the free lunch program; Set II schools were also primarily non-white but were less poor. At the other extreme, Set VI schools had 95% white children with fewer than 4% receiving free lunches. Hayes and Grether found that the gap between the two extreme groups increased with age, and that the children in the two groups made differential progress from Spring to Fall (about 5 months) as well as during the school year (about 7 months). Data are reported mainly on the 1965-66 school year and subsequent summer because of major problems with the 1966-67 data. On the reading subtest, Set I schools made 4% of their total gain from Grade 2 to Grade 6 in the summer; Set II schools made 11% of their total gain in the summer, and Set VI made 16% of their total gain during the summer. On the Word Knowledge subtest, however, Set I and Set II schools lost during the summer months, while Set VI schools made 19% of their total gain. Looked at another way, differential progress made during summers accounts for 40% of the final difference in performance on the reading subtest and 80% of the final difference in performance on the Word Knowledge subtest. These data definitely indicate a differential gain during the summer, but there are problems with the study. It was cross-sectional rather than longitudinal; some of the Puerto Rican group probably came from non-English speaking homes (of major import for the Word Knowledge subtest); and the test data appear to have been inflated on the spring testing for Set I and Set II schools (Hayes and Grether, 1969; Shapiro et al., n.d.).

Shapiro et al. (n.d.) conducted a longitudinal study of gains over one year and the following summer for primarily white high and low SES children in Grades 2, 4, and 6. The Stanford Achievement Test was administered in November 1968, April 1969, and November 1969. Comparable results were obtained with both a longitudinal and a cross-sectional analysis. Results indicated that:

> (1) the high SEL (socioeconomic level) children improve more than the low SEL children from Fall to Spring,
>
> (2) although there is some tendency in both groups for the rate of improvement to "tail-off" from Spring to Fall, this "tailing-off" is much more pronounced for the low SEL children, and
>
> (3) the two previously stated results are clearly obtained on verbal and scientific subtests but are not clearly replicated on quantitative subtests. (p. 117)

Finally, Soar and Soar (1969) studied change on the Iowa Test of Basic Skills for 189 elementary students during their fifth and sixth grade years and the intervening summer. Three elementary schools were included, spanning various SES levels, but all teachers and students were white and the proportion of disadvantaged students was probably small. Soar and Soar found summer gains of between three and five months; the summer period was about 4 1/2 months in length. They also reported variability in summer gains. "It was easy to find examples of pupils who grew at the expected rate during both school years but little, or not all, during the intervening summer. Yet examples of the reverse pattern were also easy to find." (p. 584) They do not report on relationships between summer growth patterns and student backgrounds; but they also found that summer learning was influenced by teacher style during the year.

These three studies indicate that there are differences in rate of achievement gain during the summer, and, especially, that high SES children gain more than low SES children. Shapiro et al. (n.d.) cite two studies that also found a difference in rate of change during the summer on IQ measures for children of different SES backgrounds (Coffey and Wellman, 1936-7; Wellman, 1940). Such findings suggest (1) that if disadvantaged children are to learn enough during the school year to keep up with more advanataged children, they would have to learn at an even faster rate in order to compensate for their slower rate of progress during the summer; or (2) that something should be done to increase the gain of disadvantaged children during the summer.

Austin, Rogers, and Walbesser, Jr. (1972) reviewed evaluations of the effectiveness of several such compensatory education projects and concluded that

> 1. Summer Compensatory Education programs in elementary mathematics, reading, and language-communication have generally shown modest achievement gains. However, since no randomly formed control groups were used, "maturation" remains a threat to the validity of the studies. Further, no data were found to demonstrate whether these gains persist over time.
>
> 2. Students reported an increased desire to attend school and learn the cognitive skills. However, no data were reported to indicate if those behavior changes were observable during the school year. (p. 179)

While summer projects are a possible compensatory strategy and might be used to prevent a "regression" during the summer and even promote gains, they are likely to be no more successful than regular school-year instruction unless they use different techniques or curricula. Wargo et al. (1971) report that the disadvantaged gain "norm" is .7 month increase on achievement tests for 1 month of instruction as opposed to 1 for 1 for the "average" norm. Furthermore, the Soar and Soar (1969) finding of individual differences in patterns of learning, including the finding that some children gain more during the summer than the school year, highlights the need for more research on potential effects of summer projects.

Components of Successful Projects

A number of reviewers have attempted to abstract the characteristics which are common to projects successful in producing achievement gains. Wargo et al. (1972) have compared the conclusions of six such reviews. The six reviews were those by Bissell (1970), Gordon and Kourtrelakos (1971), Gordon and Wilkerson (1966), Hawkridge, Tallmadge, and Larsen (1968b), McDill, McDill, and Sprehe (1969), and Posner (1968).[1] Each of the six studies was essentially subjective in its analysis, but the AIR study appears to be the least so. Hawkridge et al. (1968b) analytically compared each of 18 successful projects (at the preschool, elementary, and secondary levels) with one or two similar but unsuccessful projects to identify "components" associated with successful but not the matched unsuccessful projects at three grade levels. The following components were identified.

Preschool Programs

*careful planning, including statement of objectives
*teacher training in the method of the program
*small groups and a high degree of individualization
*instruction and materials closely relevant to the objectives

Elementary School Programs

*academic objectives clearly stated
*active parental involvement, particularly as motivators
*individual attention for pupils' learning problems
*high intensity of treatment

Secondary School Programs

*academic objectives clearly stated
*individualization of instruction
*directly relevant instruction

(Wargo et al., 1972, p. 185)

Wargo et al. compared these components (and one additional one -- structured environment) with the components identified by other researchers. Table 7.19 indicates the agreement among the reviewers. Two components, "academic objectives clearly stated and/or careful planning" and "small group or individualized instruction" were cited in five of the six reviews. "Active parental involvement" was cited in four reviews, and "teacher training in the methods of the program", "directly relevant

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[2] We shall not review the focus, methodology, and conclusions of each of these reviews here. More extensive discussion of several of them may be found in Chapter 8, Preschool Intervention.

TABLE 7.19

Comparison of the Components of Success
Identified by Six Investigators*

	Objectives & Planning	Teacher Training	Relevant Instruction	High Intensity	Parent Involvement	Indiv'lized Instruction	Structured Environment
Bissell	✓	✓				✓	✓
Gordon & Kourtrelakos	✓			✓	✓	✓	✓
Gordon & Wilkerson			✓	✓	✓		
Hawkridge et al.	✓	✓	✓	✓	✓	✓	
McDill et al.	✓	✓	✓		✓	✓	
Posner	✓					✓	

Note: The above table does not include ten components which were mentioned only once each by the following authors: Bissell - emphasis on language development, constant supervision of teachers and aides; Gordon & Kourtrelakos - home-based support of learning program, personnel committed to prescribed procedures, provision of immediate feedback, ample teacher planning time; Gordon & Wilkerson - peer teaching and learning, new materials and technology, learning task-specific grouping, and staffing (quantity, expert teachers, paraprofessionals, male models, support staff).

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* Taken from Wargo et al., 1972, p. 186.

instruction", and "high treatment intensity" were identified by three research teams. The agreement among these six independently conducted reviews is encouraging and lends additional credibility to each.

Wargo et al. then analyzed the 21 additional successful projects identified by AIR in 1969 (Hawkridge et al., 1969) and 1971 (Wargo et al., 1971). Table 7.20 presents the results of this analysis and indicates that most of the new projects had at least four of the previously identified components. This table includes projects at all grade levels; the starred projects are those with participants in Grades 1-3. These further analyses also suggest that components originally found to be discriminating only at certain age levels are equally likely to be found in successful projects at all age levels.

There have been two additional major attempts to identify the characteristics of successful projects. The Center for Educational Policy Research (1971) reviewed evaluations of Title I projects and identified two main characteristics common to successful Title I projects -- structure and involvement of parents. CEPR considered projects to be successful if they met their own stated objectives. Three models of structured programs were identified -- the diagnostic clinic, small group work outside the classroom, and individually prescribed instruction. All structured projects showed pupil achievement gains that were either statistically significant or equivalent to one-month gain for each month in the project. Five features were found to be characteristic of the successful structured projects: (1) individual diagnosis; (2) careful prescription based on the diagnosis; (3) sequencing of instruction for each child; (4) small group and/or individual work; and (5) emphasis on inservice training and close supervision of classroom activities.

On the other hand, some general enrichment projects (global objectives, addition of multiple resources, use of classroom teachers) produced significant gains while others did not. In summary, the CEPR report noted that "although we might wish for more data to justify a conclusion that structured programs are more consistently successful than general enrichment programs in producing 1:1 gains, we did not find any evidence which would lead us to reject the idea." (p. 2-3)

Finally, Weber (1971) conducted a search for "inner-city schools" which were successful in teaching reading. Inner-city school was defined as "a non-selective public school in the central part of a large city that is attended by very poor children" and successful reading performance was considered to be median achievement at national grade-level norm or better and an unusually low percentage of nonreaders in the middle and latter part of the third grade. After a search involving nominations and obtaining permission to visit schools, Weber administered his own reading test to pupils in order to avoid biases possibly associated with administration of a standardized test (e.g., coaching, practice on the test in some schools, etc.). The test was one of reading comprehension containing

TABLE 7.20

Presence of Previously Identified Components of Success in 21 More Recently Identified Successful Compensatory Education Projects*

Project	Location	Ages/Grades Served	Components/Characteristics						
			Objectives and Planning	Teacher Training	Relevant Instruction	High Intensity	Parent Involvement	Ind'lized Instruction	Total
Mother-Child Home	Freeport, N.Y.	2, 3 yrs. - Preschool	✓	✓	✓	✓	✓	✓	6
Oakland Preschool	Oakland, Calif.	3, 4 yrs. - Preschool		✓			✓	✓	3
Project Breakth[illegible]	Chicago, Ill.	3.5-5.5 yrs. - Preschool	✓	✓				✓	3
Project Early Push	Buffalo, N.Y.	3.75-4.75 yrs. - Preschool		✓				✓	2
Ameliorative Preschool	Champaign, Ill.	4 yrs. - Preschool, K	✓	✓	✓	✓		✓	5
Learning to Learn	Jacksonville, Fla.	5 yrs. - K	✓	✓			✓	✓	4
** Malabar Reading	Los Angeles, Calif.	Pre-K - 3rd grade	✓		✓		✓	✓	4
** Alpha One	New York, N.Y.	1st grade	✓		✓	✓			3
** Language Stimulation	Auburn, Ala.	1st grade	✓	✓	✓	✓		✓	5
** Augmented Reading	Pomona, Calif.	1st - 3rd grade	✓	✓				✓	3
** Project MARS	Leominster, Mass.	1st - 4th grade	✓	✓	✓	✓	✓	✓	6
** Project Conquest	E. St. Louis, Ill.	1st - 6th grade	✓	✓	✓	✓		✓	5
** Plus Program	Buffalo, N.Y.	1st - 8th grade		✓	✓	✓		✓	4
** Ferra[illegible] School	Los Angeles, Calif.	2nd - 8th grade	✓	✓	✓	✓		✓	5
** Afternoon Remed. & Enrich.	Buffalo, N.Y.	3rd - 8th grade					✓	✓	2
Diagnostic Reading Clinic	Cleveland, Ohio	4th - 7th grade	✓	✓	✓	✓		✓	5
Remedial Reading Labs	El Paso, Texas	4th - 12th grade	✓	✓	✓	✓		✓	5
Lafayette Bilingual	Chicago, Ill.	6th - 8th grade	✓	✓	✓	✓	✓		5
Expanded Language Arts	Buffalo, N.Y.	7th - 12th grade		✓				✓	2
Higher Horizons 100	Hartford, Conn.	9th grade	✓		✓			✓	3
Summer Upward Bound	Terre Haute, Ind.	10th grade	✓		✓	✓			3
Total			16	16	14	12	7	18	83

Note: Shaded portions of table indicate characteristics not found relevant for age/grade bands served by corresponding projects (see text).

* Taken from Wargo et al., 1972, p. 189 (Figure 7.9).

** Early Elementary Projects

32 items which could be administered in 15 minutes. Weber visited and personally administered the test to students in 17 urban schols, finally selecting 4 schools which met the criteria of being inner-city and fostering reading success. The schools were P.S. 11 in Manhattan, the Woodland School in Kansas City, Missouri, the John H. Finley School (P.S. 129) in Manhattan, and the Ann Street School in Los Angeles. The general level of achievement of the 4 schools, as compared to other schools, is presented in table 7.21.

Weber then identified eight characteristics common to these schools which are usually not present in unsuccessful inner-city schools: (1) strong leadership, (2) high expectations, (3) good atmosphere, (4) strong emphasis on reading, (5) additional reading personnel, (6) use of phonics, (7) individualization, and (8) careful evaluation of pupil progress. Weber also identified characteristics which were not common to all four schools but which are sometimes considered as related to school success: small class size, achievement grouping, quality of teaching, ethnic background of teachers, preschool education, and outstanding facilities or physical features.

It should be noted that Weber's methodology is weaker than that of Hawkridge et al. (1968b), and we do not know whether some of the 8 characteristics common to the 4 successful schools were also common to some unsuccessful schools. Nevertheless, many of the characteristics cited by Weber are comparable to those cited by reviewers of the literature on compensatory education. Furthermore, Weber evaluated the students when they were in the third grade in order to give all methods of reading instruction a fair chance to demonstrate their effectiveness.

Weber remarked on one additional common feature of the 4 schools; none of the successful reading projects had been in operation for only a year or two.

> This fact should serve as a warning to schools who hope to do the job in a year. In the case of P.S. 11, the approximate age of the beginning reading program in its present form is three years. At John H. Finley, it is nine years! At Woodland, it is three years. At the Ann Street School, the Sullivan program has been used only two years, but many of the features of the beginning reading program date back four years, to the time when the principal came to the school. (p. 28)

It seems appropriate to mention here some factors which have not been found to be related to the effectiveness of the school in fostering pupil achievment. Both Averch et al. (1971) and Jencks et al. (1972) have reviewed and/or reanalyzed studies which attempted to relate student achievement outcomes to school resources. Averch et al. (1971) reviewed 18

TABLE 7.21

Average Grade-Equivalent Scores for the
Four Successful Schools and Others*

	% of Third Grade Not Tested (absent or non-English)	Percentages of Third-Graders Tested Receiving Various Grade-Equivalent Scores				
		Non-Reader	I	II	III	IV & Up
Typical High-Income Schools (estimated)	5-15	0-5	0-5	3-10	3-10	72-92
Typical Average-Income Schools (estimated)	5-15	10-20	10-20	10-20	10-20	30-50
The Four Successful Inner-City Schools (actual)	12-20	7-14	6-12	13-23	16-21	42-46
Typical Inner-City Schools (estimated)	10-25	25-35	5-30	10-25	10-20	15-25

*Taken from Weber, 1971, p. 11.

major input-output studies which attempted to determine the contribution of any given resource, factor, or influence to student outcome. The four most common resources used in such studies were (1) average teacher experience, (2) salary, (3) degree level, and (4) verbal ability. Average class size, student-teacher ratios, and measures of the school facilities (e.g., age of building or number of library books per student) are also frequently used. They conclude:

> Research into educational effectiveness by means of the input-output approach has not, as yet, yielded consistent results regarding the importance of school resources. Background factors tend to dominate the results. No single resource consistently appears to exert a powerful influence on student outcomes. Some school resources appear to be important in each study, but the same resources appear to be unimportant in other studies. In fact, there is very little evidence that school resources in general have a powerful impact upon student outcomes, even neglecting the question of which school resources are influential. It must also be emphasized that these results should not be interpreted as indicating that school resources do not affect student outcomes. We can only observe that these studies have failed to show that school resources do affect student outcomes. (p. 48)

Jencks et al. (1972) also tried to associate resources and school effectiveness, reviewing the literature and reanalyzing data from the Coleman Report, Project Talent, and the Plowden survey (see Peaker, 1971) in England.

> We concentrated on school policies and resources that could be directly controlled by legislators, school boards, and administrators. This means we have looked at things like physical facilities, libraries and library books, how much homework a school assigns, whether it has heterogeneous or homogeneous grouping, numbers and kinds of personnel, salaries, criteria for selecting teachers, and so forth. We have not looked in any detail at things like morale, teacher expectations, school traditions, and school "climate". (p. 188)

These researchers found that "no measurable school resource or policy shows a consistent relationship to schools' effectiveness in boosting student achievement" and that "the gains associated with any given resource are almost always small" (p. 190). However, Jencks et al. note that their conclusions are limited by the type of school resources they had access to in their reanalyses:

> The research we have been discussing has one major limitation. It deals only with the effects of extra resources in existing public schools. It tells us that if schools continue to use their resources as they now do, giving them more resources will not change the children's test scores. If schools used their resources differently, however, additional resources might conceivably have larger payoffs. There is no way of testing this theory except by experimentation. (1972, p. 193)

In summary, simply providing extra resources has no positive effect on student achievement. What does seem to matter is the way additional resources are used. Seven reviews of compensatory projects and one search for inner-city schools successful in teaching reading have identified similar characteristics of effective projects. The characteristics most frequently identified are:

(1) clearly stated academic objectives and careful planning;
(2) small group or individualized instruction;
(3) parent involvement;
(4) teacher training in the methods of the project;
(5) directly relevant instruction;
(6) intensive instruction; and
(7) high expectations and good atmosphere

(Weber, 1971)

All of these characteristics are relevant to the way in which education is provided. Although a certain level of resources would be required to maintain educational projects with these characteristics, that level of resources does not guarantee the most effective process of educating.

Chapter 8: Preschool Projects

Summary

Discussion about federal policy in child development for preschool age children has tended to focus on whether Head Start produces significant and lasting gains in IQ and school achievement tests. This does injustice to the broad, comprehensive and multi-focused aims of Head Start. This chapter deals directly with the measurable effects of preschools on primarily cognitive measures, and thus speaks to only one of the major purposes of Head Start--gains in IQ and school performance.

A number of classification systems pinpoint important dimensions of preschool projects and thus highlight curriculum options and differences in outcome effects. We consider projects as they fall on two dimensions: goal orientation and structure. Three different goal orientations--pre-academic, cognitive enrichment and socio-emotional--roughly correspond to three influential theories in psychology--respectively behaviorism, Piagetian theories and psychodynamics. Degree of structure refers to the amount of external sequencing and organization of children's activities and to the predictability, preplanning or prescheduling of either the child's behavior, the teacher's behavior or both.

Illustrative preschool projects were selected for inclusion on several possible bases: short and/or long term significant effect on commonly used measures of product variables; widespread replication; popularity; or comprehensiveness. Several preschool projects with similar goal orientation but using delivery systems other than the conventional classroom are discussed: Sesame Street, mobile vans and other television and media projects. Finally, major reviews of the literature in preschool education have been consulted.

Our analysis comes to the same general conclusions regarding the overall effects of preschool projects as the other major reviews, although we do not always agree on implications for the future. The focus of this review of the evidence has been on the child, especially on the extent to which the child's IQ and achievement test scores have been affected by his preschool experience.

Effect of preschool projects

There is an immediate increase in IQ score for most preschool projects. This may reflect genuine intellectual progress or it could reflect familiarity with the situation, greater self-confidence or an increased willingness in test-taking. Differences in IQ gains vary widely with some gains much larger than others.

The effects of most preschool projects on IQ scores do not persist beyond the second or third grade.

Immediate improvements in performance are found on achievement tests from preschool projects which focus on specific skills. In some cases they persist longer than IQ increases but typically they decline in a manner parallel to that of IQ scores. The pattern of improvement in specific content areas generally reflects the pattern of concentration within the project. The amount of improvement varies with the explicitness of objectives, the soundness of instructional methodology, the amount of time spent attaining the objectives, and the similarity between instruction and the performance required by the tests.

Several non-test results support the possibility of long term advantages of preschools on elementary school attendance, and on placement in regular rather than "special education" and low-ability tracks.

Data on non-cognitive effects of preschools are extremely limited, generally unreliable and of dubious validity.

Characteristics of successful preschool projects

Smaller, well-designed experimental projects generally produce larger gains than large-scale operational projects. The most effective projects (in terms of the measurable goals of preschools on child performance) are the most structured. Included in this meaning of structure are operational statements of objectives and the best means to accomplish them; consistent implementation of the strategies most useful in attaining the objectives; and perhaps as well, staff planning and commitment which serve as a base for striving toward defined objectives.

Although there has been a general belief that the success of preschool projects would be increased if the age of intervention were lowered, there is currently little concrete support for this belief.

The future of preschools and further research

A few experimental programs have produced preschool effects that, with sustained intervention, have led to sustained but small benefit up to the fourth grade level. This has led some to argue that preschools will produce an effect if there is continuity of programming. However, some also maintain that if there is to be intervention during school one does not necessarily need the preschool program. At present, considering everything, one should be cautious about definite positions--both pro and con--when preschool education is considered.

Continued systematic research in preschool education should be pursued however, especially investigation of child-program and teacher-program interactions. The data are not yet numerous enough to support solid conclusions, but clearly this interaction is a vital issue requiring further study. In addition more must be known about classroom process through observational study. Finally, instruments must be developed beyond IQ and achievement test to measure socio-emotional and cognitive process variables that preschools might influence. And if indeed one were interested in evaluating the success of Head Start in meeting all of its objectives, one would certainly need evaluation instruments which could measure significant changes in families and communities.

Chapter 8: Preschool Projects

During the past decade, Head Start has become well established in public discussions as a symbol of government intervention in childhood. Head Start has been most widely understood as a distributed system of preschools intended to benefit the intelligence and/or school achievement of disadvantaged (e.g., urban, black, poor) children. This symbolic status is a matter of some political importance. Public faith and trust in the value of intervention programs in early childhood has become tied to some very specific debates about preschools. The most widely discussed studies have been the Westinghouse evaluation of Head Start and the Jensen analysis of the heritability of IQ. Some accept these studies as proving that preschool intervention is unjustified in theory or practice while others, concerned to defend intervention in early childhood, have spelled out the shortcomings of the studies. One side argues that preschools should be discontinued; the other argues that they should be extended.

This controversy, stereotyped as a debate between the side that is "for children" and the side that is "against children", has tended to foster some simple conceptions of Head Start as a program, and of preschool intervention as an existing art or technology. This chapter will review existing evaluation data bearing on the efficacy of preschool intervention, but it seems important to offer some background comments before we begin.

Head Start was, by intent at least, a comprehensive program. It was designated as a Community Action Program. It was intended to provide not only preschool facilities, but also programs directed at health and family circumstances. The best-known public argument for Head Start construes it to be a program for IQ modification during an early, and presumably critical, period. This construal is supported by the widespread reporting of Head Start effects in terms of IQ test gains. But, on the other side, it should be noted that the mandate for Head Start was not premised on the simple argument that preschools will increase IQ. It should also be noted that the widespread reporting of Head Start effects in IQ terms has been a result of necessity rather than choice. Head Start projects must be evaluated, and there are almost no exisiting standardized instruments for preschool children other than IQ tests. It is by no means clear that IQ tests provide a fair and proper judgment of either Head Start projects in general, or of the preschool efforts within them. A better case can be made for the argument that Head Start should be held accountable for subsequent gains in school performance, but this does not have to mean accountability for immediate and sustained elevations in school achievement.

It would be a mistake to overestimate the uniformity of preschool interventions. Head Start has not set forth a uniform curriculum, or set of curricula, for its component projects. The only spelled out, codified, exportable preschool curriculum in existence at the time Head Start began was the traditional curriculum of Montessori. Few Head Start preschools have used that curriculum. The traditional middle class preschool, widely in use at the time Head Start was founded, is not standard and exportable nor has it been historically developed to bring about the kinds of goals envisaged by Head Start. The prototype preschools for Head Start were some scattered stimulative efforts such as those of Deutsch in New York and Gray in Nashville. These projects had not demonstrated their efficacy at the time of Head Start, and their programs have not served as the models for most of the local implementations of Head Start preschools.

There are today a wide variety of preschool projects for the disadvantaged. The majority are classroom based, though a few are delivered through mobile vans, in the home or by TV. Each project planner has had to develop his own approach using traditional preschool curriculum elements, consultants, and local improvisation. The diversity among existing approaches can only be estimated through published project descriptions, which are rare and which may not be representative. It is not easy to describe a preschool program in words, and so one is never completely sure that two projects described in different terms are, in fact, different in implementation. Conceivably, one might empirically establish the similarities and differences between ongoing preschool projects by gathering data about details of implementation or by systematic observations. Implementation or observational data in different styles of preschool work are lacking for the most part, the studies of Miller (1971) and the Stanford Research Institute (1971) being notable exceptions. Most preschools probably do not have well-formulated rationales, goals, objectives, or instructional techniques. While the question has not been studied, it is likely that a preschool may vary considerably from year to year, particularly if there are changes in key personnel. Except for heavily funded, usually university-based research projects, most preschools probably do not have well-designed experimental plans or data available to demonstrate their effects. Even when there are research data, as will be seen below, they provide a narrow and uncertain view of what the preschool does. The art of educational research is such that we know little about how to measure process variables (the behaviors of teachers and children) and are limited in our ability to measure product variables (effects on children). Observational techniques are poorly developed, expensive, and seldom used. Available standardized tests are limited to IQ and school achievement tests, and a few other cognitive or noncognitive tests (see chapter 5). This difficulty in examining the differential or specific effects of preschool projects has been discussed by a number of researchers and reviewers (e.g., Cazden, 1972).

Taxonomies of Preschool Projects

A number of classification systems have been developed in attempts to pinpoint the important dimensions of preschool projects. These classification systems are useful in several ways. They highlight major curriculum options for the project planners and parents. When projects are grouped by their stated similarities and differences, the relationship between stated project differences and outcome differences can be investigated.[2] In addition, the dimensions used in classification schemes are potentially important for theories of instruction and for the development of outcome measures. In spite of these advantages, it must be remembered that a classification system is a heuristic device which works by simplification. When programs are grouped together on a similar dimension, we are always ignoring a large number of factors on which the programs are different. It is possible that some of the unconsidered differences exert a significant influence on the child. While most classification systems outline three or four types of programs, we may eventually identify a much larger number of "types of projects." The number of divisions which are useful depends upon the purpose of the classification; for different purposes, the number of optimal types is likely to vary.

Most taxonomies developed to date had recognized one or more of the following aspects of a preschool project: its theoretical base, educational goals, degree of structure, and style of classroom interaction. Here we shall briefly outline the types of taxonomics which have been advanced. Table 8.1 provides definitions of the categories and examples of each.

The least complex attempts to categorize preschool projects are unidimensional categorizations, distinguishing projects on the basis of broad differences in theoretical base, educational goals, or general orientation to children's learning. In 1969 Kohlberg specified three different outlooks on human development which could serve as guides to preschool projects: the environmentalist or behaviorist, the nativist or maturational, and the cognitive-developmental. Each of these perspectives offers a different notion of the determinants of the child's development. Schodlatz (1969) identified four kinds of preschool projects on the basis of educational goals. The four kinds of goals were entitled (1) enrichment or supplementary, (2) compensatory, (3) academic-preparatory, and (4) cognitive-developmental. To group the Head Start Planned Variation Models, Bissell (1971) focused on primary orientation toward children's learning, specifying both the goals and techniques used to achieve the goals. Her three categories were pre-academic, cognitive discovery, and discovery.

Taxonomies using more than one dimension usually recognize distinctions based on theoretical orientation or educational goals. However, a new dimension--structure--is added. Structure has been conceptualized in different ways, and has itself been discussed both as a unidimensional variable and as a bidimensional variable. Bissell(1970) and Mayer (1971) have both focused on structure. Bissell (1971) classified preschool projects by their objectives, their strategies, and the extent of their structure.

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[2] Our knowledge of the relationship between project characteristics and outcomes, however, remains dependent upon (1) the similarity between the project description and the project in operation and (2) our evaluation indices for both effects and the successes of implementation.

TABLE 8.1

Taxonomies of Preschool Projects

Main Dimension(s)		Categories, Definitions, and Examples
		Kohlberg, 1968
Developmental Theory	1)	Environmentalist or behaviorist: All behaviors are learned; intelligence is a set of acquired information-processing skills.
	2)	Cognitive developmental or interactionist: Cognitive and affective development are natural emergents from child-environment interaction, with cognitive development providing a base for affective development. Development proceeds through qualitative changes in mental structure rather than through quantitative increases in content.
	3)	Nativist or maturationist: Intellectual growth proceeds at a predetermined, natural rate; during early childhood socioemotional development is of primary and long-lasting importance.
		Schodlatz, 1969
Educational goals	1)	Enrichment or supplementary. Goal: Providing the disadvantaged child with experiences which the advantaged child has had prior to school entry and which are supposedly responsible for the advantaged child's academic superiority, such as museum visits. Example: Howard University.
	2)	Compensatory. Goal: Offsetting or counteracting the effects of the home environment which are incompatible with the values and role expectations of the educational system. Example: DARCEE.
	3)	Academic-preparatory. Goal: Providing the disadvantaged child with the skills which are prerequisite to school success and which the child is expected to have upon school entry. Example: Bereiter-Engelmann.

TABLE 8.1 (CONT)

Taxonomies of Preschool Projects

Main Dimension(s)	Categories, Definitions, and Examples
	Schodlatz, 1969 (cont)
	4) Cognitive-developmental. Goal: Accelerating the disadvantaged child's progression through the stages of cognitive development, typically as specified by Piaget. Example: Perry Preschool (Weikart's cognitively oriented).
	Bissell, 1971
Orientation toward learning	1) Preacademic. Goal: Foster the development of preacademic skills. Technique: Use of systematic reinforcement. Example: Engelmann-Becker.
	2) Cognitive Discovery. Goal: Promote the growth of basic cognitive processes by providing continuous verbal accompaniment to children's sequenced exploration. Example: Tucson Early Education.
	3) Discovery. Goal: Foster learning as part of the humanistic growth of the "whole child". Technique: Encourage such experiences as free exploration and self-expression. Example: Bank Street.
	Bissell, 1970
Objectives Strategies	1) Permissive enrichment. Objective: Developing the "whole" child. Strategy: Nondirective. Exemplary projects: Bank Street, "Traditional".
	2) Structured-cognitive. Objective: Developing attitudes and aptitudes related to learning and language skills. Strategy: Mixed directive and nondirective. Exemplary projects: Karnes' Ameliorative, Sprigle's Learning to Learn, Weikart's Cognitively-Oriented.
	3) Structured-informational. Objectives: Teaching specific information and language patterns. Strategy: Directive. Exemplary project: Bereiter-Engelmann.

TABLE 8.1 (CONT)

Taxonomies of Preschool Projects

Main Dimension(s)	Categories, Definitions, and Examples
	Bissell, 1970 (cont)
	4) Structured-environment. Objective: Developing the learning processes. Strategy: Moderate structure via self-instructing classroom materials. Exemplary projects: Montessori, Nimnicht's New Nursery School.
	Mayer, 1971
Predominant Interactions	1) Child development. Objective: Developing the "whole" child, but with emphasis on social and emotional development. Predominant interaction: child-child. Exemplary project: Bank Street.
	2) Verbal-cognitive. Objective: Developing the "whole" child but with emphasis on cognitive and language development. Predominant interactions: a balance of child-child and child-teacher. Exemplary project: Weikart's Cognitive-Oriented.
	3) Verbal-didactic. Objective: Transmitting academic skills and information. Predominant interaction: teacher-child. Exemplary project: Bereiter-Engelmann.
	4) Sensory-cognitive. Objective: Developing the "whole" child but with emphasis on sensory discrimination and motor abilities. Predominant interaction: child-material. Exemplary project: Montessori.
	Weikart, 1971
Predominant Roles of Teacher and Child	1) Child-centered. Goal: Developing the "whole" child. Teacher role: responder. Child role: initiator. Exemplary projects: Bank Street, Nimnicht's New Nursery School (Responsitve model), Montessori.

TABLE 8.1 (CONT)

Taxonomies of Preschool Projects

Main Dimension(s)	Categories, Definitions, and Examples
	Weikart, 1971 (cont)
	2) Open Framework. Goal: Developing cognition and language. Teacher role: initiator. Child role: initiator. Exemplary projects: Weikart's Cognitively-Oriented, Karnes' Ameliorative, Sprigle's Learning to Learn.
	3) Programmed. Goal: Achieving clearly defined academic objectives such as reading, language skills and motor skills. Teacher role: initiator. Child role: responder. Exemplary projects: Bereiter-Engelmann, Resnick's Primary Education Project.
	4) Custodial. Goal: Caring for the child's physical needs. Teacher role: responder. Child role: responder. Exemplary project: none.
	Bussis and Chittenden, 1970
Contributions of teacher and child	1) Open education. Teacher contribution: high. Child contribution: high. Exemplary project: EDC.
	2) Traditional British. Teacher contribution: high. Child contribution: low.
	3) Programmed instruction or "by the book". Teacher contribution: low. Child contribution: low.
	4) Laissez-faire. Teacher contribution: low. Child contribution: high.

For Bissell, structure referred to amount of external organization and sequencing of the child's experiences. A directive strategy provides a high degree of structure: using this strategy the teacher selects and guides the children's activities. A nondirective strategy provides a low or moderate degree of structure, and the children determine their own activities to some extent. The four categories designated were (1) permissive enrichment, (2) structured-cognitive, (3) structured-informational, and (4) structured-environment. Using theoretical rational, goals, and structural characteristics, Mayer (1971) also distinguished four groups of preschool projects. Unlike Bissell, Mayer conceptualized structure in terms of interactions among the child, the teacher, and the materials. Structure can reside in the teacher's direction of the child, the sequencing inherent in the materials, or both. Mayer's four categories were labeled (1) child development, (2) verbal-cognitive, (3) verbal didactive, and (4) sensory-cognitive. The four categories specified by Bissell (1970) and Mayer (1971) are directly comparable because they eventuate in the same groupings of projects, even though the labels assigned to the groups differ somewhat.

Weikart (1972) while not using the term structure, recognized factors which are probably related to what others call structure. He classified projects by the predominant roles played by the teacher and the child. Both the teacher and the child can play the role of initiator or of responder. Initiating or active teachers plan, organize, develop, and present materials and activities--usually in accord with some reasonably definite notions about what they would like to achieve or optimize. Responding teachers watch, respond to child behaviors, and facilitate interactions among children and among children and materials--usually in accord with a general knowledge of child development. The initiating child freely makes choices about activities and interaction and carries out self-developed plans, while the responding child is attentive or receptive to other-directed plans and activities and works within a framework of prescribed behaviors. Preschool projects fall into one of four categories defined in part by teacher role (initiator or responder) and child role (initiator or responder). In addition, the four categories differ in their major goals. Weikart's categories are (1) child-centered (teacher responder, child initiator), (2) open framework (teacher initiator, child initiator), (3) programmed (teacher initiator, child responder), and (4) custodial (teacher responder, child responder).[3]

Bussis and Chittenden (1970) present a similar taxonomy, using the terms "teacher and child contributions" instead of teacher and child roles. Their four categories are (1) open education (high teacher and high child contribution), (2) traditional British (high teacher and low child contribution),

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[3] Our definition of a preschool project requires an instructional or educational component. Custodial care that was not specified as developmental would be considered day care rather than preschool.

(3) programmed instruction or "by the book" (low teacher and low child contribution), and (4) laissez-faire (low teacher and high child contribution). In these categories, the contribution made by the teacher or child appears to increase as the structure provided to the teacher or child decreases. Thus "contribution" is the inverse of "structure." Diagrammatic representations of the category systems of Weikart (1972) and Bussis and Chittenden (1970) are presented in Figure 8.2.

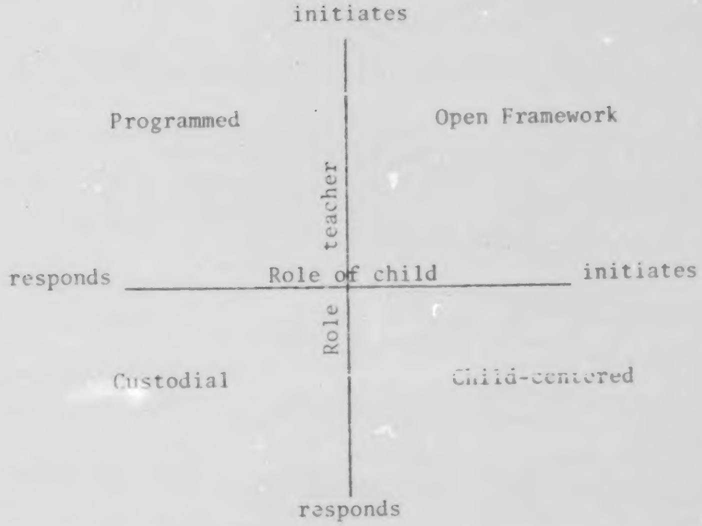
Parker and Day (1972) do not present a taxonomy per se, but instead identify six dimensions which represent potentially important issues on which one might contrast preschool projects. These are: (1) foundation of the conceptualization--the degree of influence which formal child developmental theory or empirical research had in the project's development and operational philosophy; (2) goals and objectives--such things as sensory-motor skills, cognition, language, socioemotional development and academic content; the goals and objectives can be compared as to explicitness, breadth, and emphasis on content or process; (3) implementation--how the curriculum is presented and the classroom environment organized, including type of instructional format (direct instruction, games and exploratory learning), the teacher's role, the grouping of the children, the sequencing of content, and parental participation; (4) assumptions concerning the child's motivation; (5) teacher motivation; and (6) exportability. Parker and Day presented a 3 x 3 matrix of structure, with level of structure provided for the child on one axis and level of structure provided for the teacher on the other axis. Structure for the child refers to "the initiation and direction of learning activities by the teacher". With regard to the teacher, "the more the curriculum, be behavioral objectives, and instructional format are specified for the teacher before he comes to the classroom, the more structured is the role of the teacher" (p. 494). Structure for both teacher and child was divided into three levels--low to moderate, moderate, moderate to high--but the levels were viewed as blocks on a continuum on which programs were placed according to the average amount, but not the range, of structure characteristic of the program.

In summary, although the names and number of categories differ, one observes a marked similarity among the dimensions used for classification of preschool projects. The dimensions used most frequently are goals and structure, where structure can be regarded as one facet of instructional strategy (means of reaching instructional objectives or goals). Most of the categorizations have been made on the basis of written materials. There is a definite trend, however, toward recognizing the need for categorizations based on observation of the process actually occurring in the classroom. Typologies based on observation are essential if we are to ever determine (1) the relationship between stated goals, stated instructional strategies, and actual classroom events and (2) the relationship between the activities occurring in the classroom and effects on the child.

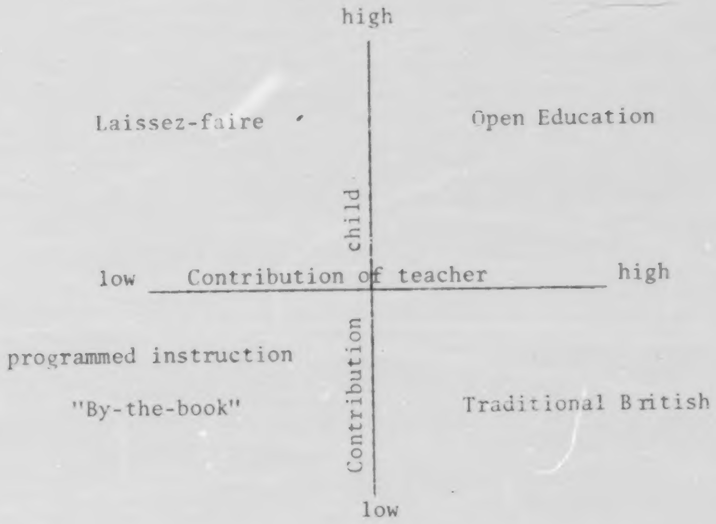
FIGURE 8.2

Two Taxonomies

Weikart (1972)



Bussis and Chittenden (1970)



Banta (1972) has shown that Montessori classrooms vary widely depending upon the teacher. At this point we do not know whether teacher variability is as great for other curriculum models, how much teacher training would be required to reduce such variability, or even whether the reduction of teacher variability would be wholly desirable. Most important for our current attempts to identify effective programs, however, is the possibility that we may not have a clear assessment of the effectiveness of various curriculum goals and materials. Highly structured materials may be implemented most similarly by all teachers. The less structured the curriculum, the more room there may be for teacher variability in implementing the materials. Thus in less structured curriculum models we may be assessing teacher effectiveness more than curriculum effectiveness. This is not to imply that teacher and curriculum variables do not interact. Indeed, Bereiter has pointed out that proper use of his highly structured curriculum requires a highly energetic teacher. But it must be emphasized that before any comparative assessment of preschool projects can be informative, we must know that we truly have a contrast for comparison, and we must understand something about where the contrast lies--what specific variable or variables define it.

The Taxonomy Used Here

As noted earlier, the goals and objectives as well as the techniques used in many preschools are currently guided by or rationalized by research and theory coming from psychology. There is no one theory of child development; instead three different general conceptions of the development of the child can be identified. Each conception has some empirical validity; each explains or accounts for some set of facts about children's behavior. Loosely, the three major schools of psychology offering contrasing conceptions of development are the behavioristic, the cognitive developmental, and the psychodynamic. Perhaps the most familiar examples of these three general conceptions of development are, respectively, Skinner's experimental analysis of behavior, Piaget's epigenetic stage theory of cognitive development, and Freud's psychodynamic theory of development.

Each of these theoretical frameworks generates a different notion of what leads to the individual characteristics descriptive of the "disadvantaged" child and of how they can be avoided and/or overcome.

Briefly, because the behaviorist approach maintains that all behaviors are learned, it implies that educational disadvantage exists because specific preacademic and/or social skills necessary to succeed in school have not been acquired. These skills must be taught to the child using appropriate instructional techniques to attain specified behavioral objectives. The contingencies between environmental stimulus and child response and/or child stimulus and environmental response are carefully planned in advance, with reinforcement (or reward) being used to encourage the desired behaviors.

The cognitive developmental approach emphasizes the process of cognitive growth more than the learning of specific content. It is assumed that the disadvantaged child has not had sufficient experience with his world in a manner that is conducive to cognitive growth. He needs appropriate interactions with people and materials to learn how to process information and solve problems in a logical and efficient manner. Often, in addition, his verbal skills as they relate to thought processes are inadequate. Instructional techniques vary, but the child's self-guided activity and experimentation with various aspects of the environment are seen as important. Learning is facilitated when there is a "match" between the child's level of cognitive development and the experiences encountered.

Finally, the psychodynamic approach considers socioemotional goals to be essential for optimal development of the "whole" child. Learning presupposes the development of a "healthy" individual. A positive self-image, trust, emotional stability, constructive peer relationships, etc., are essential to successful learning. Instructional technique emphasizes the quality of interpersonal relationships and an environment which supports self-actualization. Free choice and self-determination are important. It is usually assumed that the child "knows what is best" for his personal growth.

Adherence to any one of these three general theoretical orientations should lead naturally to emphases on goals, objectives, and instructional techniques that are consistent with the particular theory. For example, a behavioristic approach specifies an instructional technique which can be used to attain objectives within almost any realm of child development, although the behavioristic approach has been most frequently used with academic objectives. The cognitive-developmental approach and the psychodynamic approach imply general goals and instructional techniques. However, it would be a gross oversimplification to say that the theory specifies the curriculum. At the present time instructional theory represents a major void in education, and our ability to translate from a theory of child development to instructional technique is quite limited. In addition, almost all project planners include academic success and social-emotional development in their general goals, although the goals most emphasized vary among the programs. The theory provides the general outline, and the interpretations of the project planners, societal values, and conceptions of disadvantage are used to fill in the details.

We use these three theoretical approaches as one basis on which to contrast projects. Because the behavioristic approach is used almost exclusively to achieve preacademic instruction, we label preschool programs derived from this approach "preacademic." The cognitive developmental approach leads to projects emphasizing "cognitive enrichment," and the psychodynamic to "socioemotional" projects. Thus, this categorization rests on a theoretical base and typically-associated primary goals.

Structure is the other main dimension used to categorize programs. As is obvious from the variety of definitions offered previously, structure is a variable which is difficult to pinpoint. However, there is consensus that it is a key variable in differentiating preschool models and, possibly, in differentiating effects on the child. As used most commonly, structure refers to the amount of external sequencing and organization of children's activities (Bissell, 1970; DiLorenzo et al., 1969; Karnes et al., 1969a). It also refers to the predictability, preplanning or prescheduling of the child's behavior, the teacher's behavior, or both.

Similarly, the behaviors predicted can be either molar or molecular. Molar activities or events are those that might appear on a "lesson plan", such as reading period or finger painting. Molecular behaviors are the component behaviors of molar behavior; they might be listed as "behavioral objectives." For example, the particular steps involved in teaching reading are molecular. These molecular behaviors are usually specified only in programs which delineate specific behavioral objectives.

Structure has been found important for project success on two levels. First, when structure is defined as the amount of teacher direction of child activities, a higher degree of structure is directly related to greater gains on cognitive measures. In general, the "disadvantaged" child makes greater immediate cognitive gains when the preschool situation is a highly directive or structured one. (Karnes et al., 1969d; Weikart, 1967, 1971; Bissell, 1970; Miller and Dyer, 1970; DiLorenzo et al., 1969).

Second, structure defined as good administration or staff management appears to be related to project success. The provision of a programmatic framework and a high level of teacher involvement and supervision leads to greater immediate cognitive gains (Weikart, 1971; Stearns, 1971; Wargo et al. 1971). It seems that a highly structured curriculum in the first sense is more likely to be well managed than a loosely structured curriculum (Parker and Day, 1972; Weikart, 1972).

In the present taxonomy we have chosen to make the structure dimension a continuum from high to low. High structure involves the predetermination of both teacher and child behaviors by the curriculum. In this case, the teacher follows a specifically defined role prescription developed by project planners. The child's behavior is directly dependent upon the teacher's and also fits a prescribed role. Neither teacher nor child behavior should vary greatly among classrooms implementing the same curriculum.

Low structure refers to a situation in which neither child nor teacher behaviors are prescribed on any level by the project planners. Teachers are free to act on the basis of their own feelings, intuitions, educational philosophy, etc., as long as these are congruent with the overall goals of the project. Both teacher and child are free to choose curricular activities and to act spontaneously according to their needs. Individual behaviors vary widely from classroom to classroom since there are no specified behavioral objectives.

The middle of the structure continuum includes both projects with a mixture of high and low structure situations and projects which offer broad guidelines for teacher and child. Many projects use both highly structured instructional periods and periods of free play. Also, many projects delineate longterm goals but do not provide a step-by-step curriculum for attaining behavioral objectives. For example, it may be specified that every child should learn colors, shapes, and the alphabet without specifying how the child is to be taught. Here molar activities are predetermined but molecular activities are determined by the teacher.

In summary, high structure describes a situation in which both teacher and child roles are prescribed by project planners. Low structure describes a situation in which neither teacher nor·child roles are prescribed. Mixed or median structure corresponds to alternating periods of high and low structure, or to a situation in which both the child and the teacher are free to act within prescribed molar activities.

Our categorization of preschool projects is presented in Table 8.3. The projects are placed within categories according to their general approach and are ranked on the structure scale on the basis of published project descriptions. Unfortunately, ranking projects on the basis of written description is somewhat risky; Weikart (1972) and Bereiter (1972) have stressed the rhetorical nature of making such distinctions without observational data. Here we have no choice but to assume that there is a correspondence between written descriptions and actual classroom activities. Notably, high structure is associated with preacademic projects, medium or mixed structure with cognitive enrichment projects, and low structure with socioemotional projects. In addition, a rank ordering from high structure-preacademic to low structure-socioemotional projects results in basically the same order as that achieved by other taxonomies presented earlier in the present section. Because categorizations appear to be somewhat arbitrary and subjective, the extent of agreement among those familiar with project descriptions is reassuring.

Project Selection Criteria

A survey of the literature reveals many different approaches to preschool intervention. Selection of the projects to be included in the present report were based on certain rather broad selection criteria. Projects were chosen which (1) reported significant effects (short and/or long term) on commonly used measures of product variables; or (2) had been exported to different sites where original site results were replicated;[4] or (3) served as examples of the variety of projects in existence; or (4) were comprehensive in their age range and services.

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[4] A project which has been exported to a different site is not thereby necessarily successfully implemented at that site. Successful implementation requires that the original project and the import project have the same instructional situational characteristics.

TABLE 8.3

Taxonomy of Preschool Projects

	Approach			
Structure	Preacademic	Cognitive Enrichment		Socioemotional
High	Bereiter-Engelmann	Karnes		
	Ulrich	PEP	SEDL	
	Bushell			
Medium Mixed				Beller Get Set
		Weikart		Durham EIP
		Learning to Learn		Howard
		DARCEE	SEL	
	Rough Rock	IDS	AEL	Bank Street
		Caldwell		EDC
		Fresno		
Low		Tucson		
		Nimnicht		

Our major goal was to identify projects that had produced significant gains on cognitive and/or noncognitive measures as reported by project researches. Ideally, these effects would be maintained into the primary grades. Gains were considered to be significant (1) if short term gains for the experimental group were statistically significant; and (2) if there was some indication that the experimental children were more successful in primary school than comparable children without preschool experience. Educational significance, defined as attainment of the norm on test measures, was not a criterion. The criterion of significant gains generally resulted in the exclusion of projects without good experimental designs, specific goals, or well-reasoned curricula. Many of the projects meeting this criterion are now Head Start Planned Variation models and/or have been selected by other reviewers as exemplary projects (Parker et al., 1970; Stearns, 1971; Wargo et al., 1971).

Exportation and attempted implementation at a replication site was considered important. Unfortunately, at this time we have data on the implementation at different sites of very few projects. Understandably, no projects met this selection criterion that did not meet the first.

An attempt was made to include samples of the variety of project types available. Even if a project reported no data or no significant effects, it was included if we felt that it represented an interesting approach to preschool education. Similarly, examples of different delivery systems and of projects for special categories of "disadvantaged" (bi-lingual or rural) were included.

Finally, a number of comprehensive projects were selected which include a broader age and service range than the usual preschool project. Often these overlap with other areas of intervention reviewed in this report--family intervention, elementary education, health, and daycare. Such projects represent a new trend in programming for the disadvantaged child and his family.

Description of Projects and Effects

The project descriptions which follow were taken from the cited references only. They are not always descriptive of the projects as they are operating presently either at the original site or export sites. Instead, the descriptions briefly present the projects as they operated when attended by the children on whom short-term and/or long-term data are reported. Since many of the projects are ongoing, curriculum changes have been and are being made. Therefore, the project descriptions may not always coincide with more up-to-date descriptions; this is especially true with regard to Head Start Planned Variation models. Many of the projects described are the original pilot projects, not the final Planned Variation Model.

Many project descriptions are fairly general and vague, and we do not know the correspondence between project description and project operation. Increasingly complete verbal descriptions, verified by site visits, are essential if project descriptions are to be both valid and reflective of the constant process of project development. Few projects remain the same over years of operation; they develop according to new evaluative data and new ideas about the most appropriate goals and strategies to achieve those goals.

In addition all cited effects, which follow the project descriptions, are derived from published in-house evaluations of the projects. No attempt has been made here to critically evaluate or statistically reanalyze the purported effects of each individual project; some of the effects reported are questionable and require more careful analysis. The tables summarizing project effects provide information concerning the specific evaluative instruments used.

Pre-Academic

Earlier in this chapter, the preacademic category was characterized as being based on the behavioristic or learning theory tradition which asserts that human behavior may be flexibly trained and engineered. Within this approach intelligence is defined as the set of acquired information-processing skills possessed by an individual. Learning proceeds optimally when content is broken down into small, sequenced steps and presented in such a way that the child is continually reinforced for correct responses and failure is kept to a minimum. Project planners adopting this approach subscribe to the view that the disadvantaged child's "disadvantage" is his lack of the (pre) academic and/or social skills necessary to school success. These are skills which the "advantaged child" has acquired prior to school entry, e.g., the ability to follow directions (understand instructional language), viewing adults as information sources, ability to delay gratification, counting, and so on. Each project planner delineates operationally what he considers these prerequisite skills to be; their acquisition becomes the main goal of the project.

Objectives are operationally defined and sequenced and the means for attaining these objectives (the curriculum strategy or method) are usually clearly and operationally defined Content is taught (intentional learning) rather than being learned informally. Direct reinforcement and evaluation of the child's progress is considered an important part of the teacher's responsibility.

However, there are still many possible variations in instructional situation characteristics. For example, children may be instructed in groups or singly; material or social reinforcements can be used; teachers may follow explicit, predesigned lesson plans or they may be free to plan for themselves.

Bereiter-Engelmann's "Academically-Oriented" Preschool Project, University of Illinois (Bereiter and Engelmann, 1966, 1968, no date).[5] Bereiter and Engelmann's preschool project began with the assumption that disadvantaged preschool children lack the basic academic skills, especially language skills, that are a prerequisite to school success. Their argument is that a preschool cannot reasonably expect to replace all of the advantages and amenities offered by a middle-class upbringing; preschools should focus on the development of school-related skills. In order to catch up with middle-class children, disadvantaged children must progress at a faster rate and concentrate on specific material.

Since Bereiter and Engelmann felt that the disadvantaged child's major deficit is in the cognitive use of language as a logical communication system and that this ability is necessary for success in school, their project was aimed specifically at the use of instructional language. Of the fifteen academic objectives specified as essential, nine pertain to words and constructions used in ordinary conversation. Six pertain to numerical and reading skills.

The method devised to implement these goals was essentially a language program which resembles teaching English as a foreign language. A rule was presented and then applied via rote memorization and drill. Typically, there were fifteen children and three teachers in each preschool class. The two and a half hour program was built around three daily twenty-minute periods of intensive instruction--one devoted to language, one to reading, and one to arithmetic. Children were grouped by ability, and the teacher-child ratio during instructional time was 1-(4-9). The distinctive characteristics of the instructional method were a fast pace, little task-irrelevant behavior, a strong emphasis on verbal responses with continual feedback, and carefully planned and sequenced units and heavy demands for paying attention and performing with the group.

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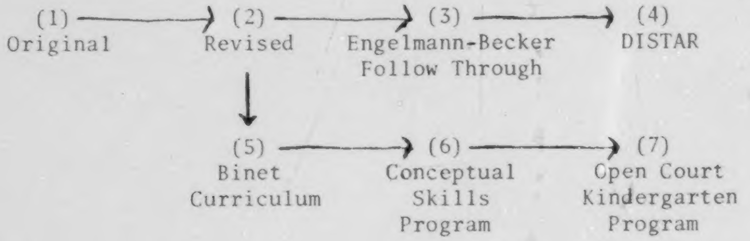
[5] The original Bereiter-Engelmann curriculum has gone through a number of "revisions". As listed by Bereiter (personal communication), they are:


(1)
Original
(2)
Revised
(3)
Engelmann-Becker Follow Through
(4)
DISTAR
(5)
Binet Curriculum
(6)
Conceptual Skills Program
(7)
Open Court Kindergarten Program

(1) All 1968 references and earlier
(2) Karnes et al. (1969d)
(5) Karnes et al. (1969d)

(3),(4),(6),(7)
All Kg-primary grades programs
No references

All three curriculum areas involved repetitious drill in basic sentence patterns. For example, the beginning language program started by assuming only that the child was capable of imitating what was said to him. First two basic statement forms were taught: (1) the first order statement or identity statement, "This is (not) a_____" and "These are (not)_____s"; and (2) second order statements, "This_____ is _____", with their negative and plural variations. Polars, prepositions, colors, patterns, shapes and materials were used in the statement forms. It was only after intensive, highly disciplined and rewarded verbatim repetition of these patterns, leading to generalizable rules and basic logical uses, that the child was allowed to progress. Then he moved to an expanded system including active verbs, common tenses and personal pronouns. Eventually he reached deductive problem-solving tasks by means of this hierarchy of task difficulty.

Bereiter and Engelmann (undated) reported that the immediate goal of academic achievement was attained and learning generalized. They did not consider long range effects and increased IQ scores to be their primary concern, given the educational objectives of the project. After two years of instruction all the experimental children had gained 10-42 points in Stanford-Binet IQ while comparison children in a traditional preschool had changed from -10 to +21 points and averaged a mean IQ 20 points lower than experimental subjects. By the end of kindergarten and in one-third to one-sixth the time required in regular school, the disadvantaged experimental preschoolers could read at the same levels as advantaged second graders. None of the experimental children had failed, and the highest achievers were not necessarily those with the highest IQ.

In spite of the criticisms concerning the negative effects of pressure, Bereiter and Engelmann reported, on the basis of parent interviews and observations, that the experimental children had fewer than average emotional problems. A firm and realistic self-confidence was apparently one of the most noticeable traits of the experimental children.

Three studies (Erickson et al., 1969; Karnes et al., 1969d; Miller et al., 1970) comparing the effects of various preschool programs have used the Bereiter-Engelmann curriculum. Therefore, we have considerable information (relative to other curricula) concerning the effects of the program when it is exported. All three of these studies found the curriculum to be successful in increasing Stanford-Binet IQ scores. Karnes et al. (1969d) and Erickson et al. (1969) reported that scores on achievement tests after Grade 1 and after Kindergarden, respectively, were also improved as a result of participation in the program, but Miller et al. (1970) found that performance on the Metropolitan Readiness Test (after one year of Bereiter-Engelmann preschool and regular or Follow Through Kindergarten) was not better than the performance of control children. While Miller found some, though little, significant improvement on non-cognitive measures, Erickson reported (1) higher teacher ratings of such characteristics as reality orientation, social adjustment and temperment, and (2) fewer absences in children who attended a Bereiter-Engelmann preschool. In general, the Bereiter-Engelmann curriculum appears to be similarly effective whether implemented by its originators or by others who appropriately used the specified curriculum content and instructional strategies.

R. Ulrich, The Learning Village, Kalamazoo, Michigan (Ulrich, Louisell, and Wolfe, 1971). The Learning Village is not exclusively a project for the disadvantaged. It is a racially and economically integrated, full day, year round school system for children between the ages of two months and eleven years. Based on techniques of behavior modification, sometimes called contingency management, its goal is to deliberately create the desirable behaviors that are ordinarily acquired through home and school experiences. These behaviors are both academic (e.g., the effective use of language and abstract concepts, the acquisition of information) and personal (e.g., the ability to keep onself healthy and productive, the ability to understand the causes of one's behavior, and social and emotional behaviors necessary to survive.)

Three educational programs are provided: an infant nursery for ages two to thirty months with a staff child ratio of 1/3; a nursery for ages two and one half years to five years; and a grade school for children five to eleven years. The overall staff/child ratio is 1/5. The nursery program includes four twenty-minute study periods each morning devoted to language skills, reading, arithmetic (all DISTAR materials)[6], science, social studies, or the scientific exploration, manipulation, and analysis of the environment.

College and high school students and parents (41% of the Learning Village students have parents who work there) are trained in the use of behavior modification, and comprise most of the teaching staff.

Assessment of the effects of the Learning Village have just begun, but there are some data from a previous group of children, who attended (1) a traditional nursery school followed by public Kindergarten, or (2) an experimental nursery school similar to the Learning Village followed by either public Kindergarten to Learning Village Kindergarten. The majority of the children were advantaged (i.e., they were children of university faculty and students).

Initial results show that all the disadvantaged children attending the Learning Village Kindergarten scored above grade level in reading achievement, the majority placing at the beginning of the third grade. In math and spelling they placed at the end of first grade and on the Boehm test of basic concepts the majority placed above the 90th percentile for their age level. In contrast, those in public kindergarten placed either before or into the early months of first grade in all three areas.

Although an extensive program of testing, including non-cognitive measures, is planned, only anecdotal evidence is available to date regarding social and emotional adjustment. Both parents and professional visitors report that children are happy and adjusted at the Learning Village.

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[6] The DISTAR materials are an outgrowth of the Bereiter-Engelmann curriculum (Bereiter and Engelmann, 1966).

D. Bushell, The Behavior Analysis Program (Huron Institute, forthcoming). This approach assumes that the most effective way to teach children the necessary skills, both academic and social, to succeed in school is through the use of systematic reinforcement. A classroom management system composed of a team of parents and teachers trained in reinforcement techniques, programmed instruction, and a token reinforcement system is used.

The daily schedule alternates between "earn" and "spend" periods, each 20 minutes long. During the earn periods, small group instruction (four to six children) is given in various academic subjects. Prescribed curricular materials are used, such as Sets and Numbers by Singer and Write and See by Skinner and Knakower. These are tailored to the needs of individual children, whose progress is monitored closely and who proceed at their own rate. The children are rewarded with tokens and verbal praise for approved behavior. The spend periods are used for free play. The children exchange their tokens for desired projects and activities, a wide variety of which are available.

Three procedures are necessary for implementing the program: (1) definition of the precise behavior to be displayed at the end of the program, (2) determination of entry skills, and (3) establishment of an effective, practical reinforcement system. The teacher's or parent aide's role is to assess each child's level and rate of development in order to set the proper individual goals and to keep each child motivated by the correct number of token rewards. The teachers not only reward appropriate behavior; they ignore off-task behavior or correct it by modeling or prompting. Children who cannot be controlled by these techniques are given "time-outs" and sent from the room. In general there are two teachers and two parent aides for a class of 25-30 children.

Cognitive Enrichment

Most preschool projects fall within the cognitive enrichment category. These projects vary widely in terms of their articulated theoretical position, their goals and objectives, and their means of implementing the curriculum content. They are all labeled cognitive enrichment because (1) they have neither adopted a "pure" behavioristic approach nor considered socioemotional development as their primary goal and (2) they built up theories of cognitive development to some extent.

The theoretical orientation which would be espoused by a project planner relying solely upon cognitive developmental (i.e., Piagetian) theory has been summarized by Kohlberg and Mayer (1971). Within this orientation, both affective and intellectual development are viewed as the product of interactions between the child and his environment, physical and human. Cognitive growth consists of a change in function (mode of action), not in content. It is how the child engages in learning, rather than what he learns, that is seen as central. The disadvantaged child's fundamental disadvantage is seen as delayed progress through the various stages of cognitive development, a delay which results from living in an environment that does not provide opportunities for activities (interactions between the child and his environment) highly conducive to cognitive and affective growth. The child's activities must provide an optimal balance of discrepancy and match between the mental structures of the child and his environment if structural reorganization, i.e., movement toward the next cognitive stage, is to occur. If the disadvantaged child is to catch up, he must progress through the developmental sequence at an accelerated rate.

Few project planners use the above cognitive developmental view exclusively. Kamii's Piagetian preschool does attempt to build solely upon Piagetian theory. Many projects include components which are integrally associated with cognitive developmental theory, such as instructional components focusing on classification and seriation. The cognitive enrichment programs, directing efforts toward both cognitive and affective development, are the most eclectic in both objectives and instructional strategies. At present, the curriculum content can vary widely. There are certain emphases brought over from psychological theory and data to preschool practice. These emphases-- cognitive skill training, sensory training, knowledge building, discovery processes and/or language training and language enrichment-- can be used to make a rough differentiation of preschool approaches to cognitive enrichment.[7]

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[7] Cognitive skill training generally emphasizes certain logical or proto-logical activities of the child. It emphasizes the procedures, or style, with which a child approaches a task or a problem, and views the procedures or stylistic characteristics as susceptible to practice and training. The child may be encouraged to be "reflective", to think before choosing. The child may be given practice in "classification skills". He may be encouraged to note similarities and differences.

Sensory training approaches date back to Montessori and they are generally based on findings that there are some differences between young children and adults in the balance of sensory receptivity to the world, i.e., in the extent to which young children notice and are guided by visual, auditory, and tactile or kinesthetic sensations. Some preschool curricula place great emphasis on sandpaper letters, principles of ordination embodied in nesting blocks, tactile exploration of objects, and so on following this principle. Not all sensory training approaches emphasize tactual experience, however. There are, in many curricula, components involving simple enrichment and exposure of the child to a variety of stimuli. The principle is one of toning up or conditioning sensory sensitivity and receptivity through such practice.

Knowledge building approaches simply attempt to show the child a great deal of the world--by reading to him, by field trips, by demonstrations, by projects, and by "show and tell". Virtually all preschools use some knowledge building. There are some who argue that knowledge building may represent the major issue for the disadvantaged child's cognitive

Few projects in the cognitive enrichment category adopt only one of these five emphases; it is more common for projects to emphasize two or three of them. For all cognitive enrichment projects, however, the general strategy is one of the teacher creating a great deal of the curriculum herself within clear guidelines provided by the specific theoretical framework. Both the teacher and the children are active participants in the process of learning. The instructional situation characteristics differ widely among and within projects. Children are found in large groups, small groups, free play; they are found working individually with teachers or with structured materials and machines.

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7. (Continued from the previous page)
development: the disadvantaged child reasons quite well and often superbly in a "street-smart" sense, but he is unfamiliar with and disinclined for reasoning with the kinds of materials which the school offers him. This approach tries to make him broadly familiar with the world around him, to widen his horizons, and to impart an emotional tone to the familiarization, to make him feel that things like books and triangles and numbers are worth caring about.

Discovery process preschools are generally concerned with knowledge building, but they place great emphasis on unplanned, self-guided encounters of the child with reality. The usual image of a discovery type of preschool is that of children wandering unguided through a room full of materials. But discovery process preschools can be quite highly structured. Omar Khayam Moore's autotelic teaching of reading is an artful arrangement of routines intended to lure the child into reading through a process that feels like spontaneous play in a children's "folk culture". Bank Street places the child in an open environment. The child finds what he wants to deal with,--but Bank Street follows highly organized and preplanned procedures in guiding the child through the encounter he has selected. Discovery process preschools are generally concerned with inducing an attitude about learning and knowledge as well as encouraging certain kinds of cognitive skills.

A great deal of preschool work is based on findings that differences exist between the language of advantaged and disadvantaged children and in the linguistic environment that surrounds them. These language differences are correlationally associated with differences in problem-solving, learning, and a variety of other indices of cognitive development. A number of preschools emphasize language training and language enrichment. They may hang name cards on objects all around the room to silently demonstrate that words go with things and things go with words. They may attempt expansion or expatiation training, a process where the adult reactively elaborates on what a child says either linguistically or informationally, or various other techniques.

Before proceeding to program descriptions, mention should be made of a specialized group of cognitive enrichment projects designed to help children from non-English speaking environments. They represent a specialized use of preschools, whose success or failure should probably be judged independently of the general run of preschool work.[8] Unfortunately, there are not yet data on hand with which to begin to make the judgement. Descriptions of four such programs are included in this chapter: New Nursery School, Tucson Early Education Model, Rough Rock Demonstration School, and Southwestern Educational Laboratory Early Childhood Learning System.

M. Karnes, Ameliorative Preschool Project (It Works, 1969; Karnes, Hodgins and Teska, 1969d, Karnes et al., 1971; Karnes, 1972?). The major goal of this project was to prepare the disadvantaged preschooler for effective participation in a standard school program. Subgoals included enhancing cognitive development, developing motivation, acquiring information-processing skills, developing a positive self-concept, enhancing social and emotional development, promoting motor skill development, encouraging parental participation, and enhancing staff competencies.

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[8] Bilingual and bicultural public school education were not revived in the United States until the mid-sixties when recognition was given to their political and psychological importance. Many of the children of ethnic minorities such as the Puerto Ricans, Chicanos, and Indians clearly fell into the socioeconomic "disadvantaged" category and were eligible for federally-funded preschool projects. Development of preschool educational programs for these non-English speaking children posed a number of problems. Both research and curricula in the area of bilingual education were scant, especially in early childhood education. Opinions varied and people had few models to follow. Essentially, this problem remains and there is a scarcity of recognized bilingual preschool projects.

A review of the literature and a discussion of research on bilingualism and bilingual preschool education can be found in a recent OCD topical paper, "Early Childhood Programs for Non-English Speaking Children," compiled by M. Bernbaum (1971). In addition, a number of bilingual preschool projects are reviewed in the paper and are classified according to language emphasis (dominant language vs. bilingual) and class composition (all non-English speakers vs. mixed). Another sourcebook on early childhood education for the bilingual or non-English speaking child is John and Horner's (1971) book Early Childhood Bilingual Education.

These goals were to be accomplished by implementing a program with the following characteristics: (1) use of a psycholinguistic instructional model oriented towards the factors identified in the Illinois Test of Psycholinguistic Abilities, (2) use of behavioral objectives and criterion tasks in order to help teachers state and teach goals, (3) positive verbal reinforcement, (4) low teacher-pupil ratio, (5) carefully structured daily planning, (6) promoting feelings of personal worth by successful experiences, (7) verbalization concurrent with multisensory presentation, (8) repetition in a meaningful context, (9) progression from the concrete to the abstract, (10) parental involvement by school activities in the home, and (11) in-service training of teachers.

The children were divided into three groups of five children per teacher on the basis of Stanford-Binet IQ--high, middle, and low IQ. The daily schedule was divided into three 20-minute structured learning periods devoted to math concepts, language arts and reading readiness, and science-social studies. This instruction took place in small cubicles. The aim was to provide a productive meaningful context in which to make verbal responses concerning specific subject matter through the use of a game format. Materials included lotto cards, card packs, models and miniatures, and sorting, matching, and classifying games; no traditional nursery school equipment was used. Early presentations involved heavy use of manipulative and multisensory materials with an increasing emphasis on verbal responses. Content was chosen according to the criterion of its necessity for successful academic performance.

In addition, the children were allowed to interact freely with peers in a large room during a daily music period. However, the majority of large group activities were in the form of structured play stressing visual-motor activities. Field trips were taken in groups of five.

Much emphasis was placed on the teacher-child relationship. Each teacher's task was to watch the progress of her individual children, to plan the sequence of activities, to correct incorrect responses, to praise correct responses, and to encourage verbalization in conjunction with the manipulation of concrete materials. Both adult and teenaged paraprofessionals were trained in the Karnes method and used as teachers in various classrooms.

Results indicate that the project was significantly effective in promoting intellectual functioning, language abilities, perceptual development, and school readiness for both three- and four-year-old subjects. Verbal expressive abilities were the most dramatically accelerated; no one lost IQ points as some children did in a traditional preschool program. The majority of children in the Ameliorative program achieved the norm of intellectual and language functioning for their age. Test scores of children taught by paraprofessionals using the Karnes method did not differ significantly from those of children taught by professionals.

At the end of the first grade, those who had attended the Ameliorative Preschool at four years of age followed by a public Kindergarten were unable to sustain their preschool gains in intellectual and language functioning (they were not up to norm) but nevertheless showed no serious learning deficits and were making adequate academic progress. However, those in the lowest IQ strata maintained their gains into first grade.

It was also reported that there were no significant age differences (between three-year-olds and four-year-olds) in gains made during the first year. The three-year-olds did not make gains in two years superior to the gains made by four-year-olds in one year.

Measures of non-cognitive development included a teacher questionnaire administered at the end of Kindergarten and a sentence completion test administered at the end of fourth grade. These suggested that children who had attended the Ameliorative project had more confidence and a better self image than children who had attended a traditional nursery school.

L. Resnick, The Primary Education Project, Learning Research and Development Center, University of Pittsburgh (Resnick, 1967; Wang et al, 1968-1969; Wang et al., 1970). The Primary Education Project has developed a model of individualized education for children aged three through grade two. Its major goals include developing the self-confidence of children and helping them to acquire basic skills and concepts which underlie a variety of subject matter, such as basic perceptual motor orientation, logical processes, and problem-solving skills. These goals can be achieved most effectively, they propose, by the use of individualized instruction plans which provide the child with both choice of and control over his learning.

An individualized instruction plan is provided for each child after he has been tested and observed (diagnosed). Each plan consists of a curriculum broken down into specific behavioral objectives, which are sequenced according to their level of difficulty. As the child works on his prescribed tasks, he is informally pre- and post-tested to make certain that he is achieving the prescribed objectives. The teacher provides individual verbal feedback to reinforce task completion, and it is considered important that the children experience success.

The daily schedule of the PEP project consists of two main components, a "prescription work period" followed by an "exploratory learning period." During the prescription work period, each child works on his individual plan for 30-45 minutes. During the exploratory learning period the child is free to choose his activities from both academic and non-academic alternatives. These activities include math, language arts, social studies, water play, housekeeping, and games. In addition, there is an informal group time for conversation among members of the class.

The staff of each classroom consists of a teacher, a parent educator, and a teacher aide. All three are trained in the philosophy and method of the Primary Education Project by staff at the Learning Research and Development Center and the University of Pittsburgh. The use of parents in the classroom is viewed as a means to developing a strong and mutually supportive relationship between parents and the school.

Data are available for PEP kindergarten children from the developmental school for the project, the Frick Elementary School. These children made statistically significant gains on standardized intelligence tests from fall to spring testings, with the lower IQ children gaining the most. On a standardized achievement test the kindergarten children achieved an early first grade level in arithmetic, which had been specifically taught, but were below average in reading, which had not been taught. In addition, the children made significant gains in criterion-referenced tests designed to measure specific learning from a PEP classification and quantification curriculum.

D. Weikart, Perry Preschool Project (Weikart, Deloria, Lawser, and Wiegerink, 1970). This project has three main foci: (1) the curriculum, which is cognitively oriented and derived to some extent from the theory of J. Piaget; (2) the teacher, who participates actively in developing the program; and (3) the home, where the teacher works with the mother to promote cognitive growth.

The classroom is divided into four traditional areas--large motor, small motor, housekeeping, and art--from which the children were free to select during the area teaching period (one hour). A teacher was posted in each area during this time to provide a structure within whose bounds the children were free to act. This was done by clearly defining weekly goals and planning a program to accomplish these day by day. In this manner, the materials chosen by the children were presented in sequential fashion, progressing from the concrete to the abstract over time. The thematic units emphasized sensory perception, language development, memorization, and concept development.

During the group teaching period (twenty minutes) the children were divided into two homogeneous groups of 12 children per group, based on "cognitive ability". Two teachers worked with each of these groups using "verbal bombardment"--asking the children a steady stream of questions and making comments designed to draw attention to the environment. In addition, basic skills such as pre-math concepts were taught. Socio-dramatic play and field trips were a part of the project.

The home-based part of the project consisted of 90 minutes per week of teaching mothers how they could help to educate their child and providing one-to-one tutoring. Monthly parent meetings were held for general discussion.

The results of the Perry Preschool Project through the third grade indicate the following: (1) The preschool program had a significant immediate effect on cognitive functioning, an improvement that decreased slowly over time but remained until the third grade. (2) The preschool program improved the achievement of the experimental children significantly over controls through the third grade, especially for girls. However, the effects of preschool on later achievement were smaller than the effects attributable to certain aspects of the home environment and smaller than effects attributable to entering cognitive performance. (3) The preschool program improved the long term social development and emotional adjustment of the children as measured by a teacher's rating scale. (4) Recent analyses have shown that program graduates are significantly less likely to be placed in special classes upon entry into the regular public schools.

Further analysis indicates that the preschool program was successful in helping certain children, especially those with initial ability as measured by a Stanford-Binet and without birth complications, to "break away" from demographic variables that would ordinarily predict little academic success. The child's intellectual ability rather than the mother's status and attitudes became foremost in determining performance.

Data on the third through seventh grade performance of the original experimental wave indicate that approximately 20% more of the experimental than of the control children are achieving at grade level. There are no significant differences remaining in IQ, however.

H. Sprigle, The Learning to Learn Project (Sprigle, 1971; Sprigle, Van De Riet, Van De Riet, and Sprigle, 1969; Van De Riet, Van De Riet, and Resnick, 1970: Van De Riet, 1972). The Learning to Learn Project has five stated objectives: (1) to provide a continuous sequential curriculum based on concepts and structures that have been identified as important to child development, (2) to change the traditional role and function of the teacher from a lecturer-instructor to an evaluator and from expository teaching to teaching via inquiry and exploration, (3) to change the traditional role and function of the pupil by emphasizing development in cognitive control, persistance and effort, skill in developing problem-solving strategies and decision-making, and balanced development of academic, recreative and social skills, (4) to accommodate individual differences in the rate and level of learning by the use of small group and individual learning situations, (5) to involve parents in the education and cognitive development of children by pointing out ways they can help facilitate the learning process at home, and (6) to provide a lower teacher-student ratio by using teaching assistants.

The project stresses the acquisition of strategies for information gathering, problem solving, decision making manipulation, exploration, and experimentation. The basic assumptions made were that a preschool program for the disadvantaged should be organized such that (1) it is appropriate to the child's developmental stage; (2) it makes maximal use of the child's abilities; (3) it uses a planned sequence of environmental stimulation based on a knowledge of the stages of cognitive development; (4) it emphasizes the process of learning ("learning to learn"); and (5) it guides and structures the learning experiences.

The daily program consists of an hour-and-a-half to two-hour free activity period and an hour-and-a-half group activity period. The free activity period takes place in a large classroom with an aide in charge. The children are free to choose among the various structured or semi-structured materials available, which require them to explore or manipulate. Each child determines the amount of time he will spend on a chosen activity. The emphasis is on "here and now" enjoyment and discovery. However, for periods of 15 to 20 minutes, the children are taken in groups of two to four to a small classroom. Here they are encouraged by a teacher to try one of the Learning to Learn games, which are sequenced to build on one another. The games involve language, numbers, and space. The language component is constructed around five content areas--clothing, food, animals, furniture, and transportation. The focus is on the learner and the learning process with content being a vehicle. The group activity time is devoted to story time, music, rhythm and so on in groups of 12 children and one teacher.

The teacher's job is viewed as child-oriented rather than content-oriented. She is available to help the child become active in the learning process, to make his own discoveries, to formulate his own questions, and to learn from his own actions.

Variations of the above curriculum and daily schedule have been developed for ages four, five, and six.

An inservice training program for teachers and monthly discussion groups for parents, both led by the project director but centered on parent-chosen topics, are additional components. There are also several individual partent-teacher conferences per year.

In the most recent evaluation of the Learning to Learn Program (Van De Riet, 1972), the following conclusions concerning the project's efficacy were drawn:

1. The culturally deprived children (E4) who had three years of the experimental program beginning at age four made significantly greater progress developmentally than a matched control group (C4) who attended Head Start Day Care Centers, Title I Kindergarten classes, and first grade.

2. The culturally deprived children (E5) who had two years of the experimental program beginning at age five followed by second grade in public school classes made significantly greater progress developmentally than the matched control group (C5) that attended a "traditionally" run kindergarten program and first and second grade in public school classes.

3. The E4 group made comparatively greater developmental progress at the completion of kindergarten and first grade than the E5 group.

4. The E4 and E5 groups exhibit different developmental growth and ability patterns.

5. The E4 group made their largest developmental gains during the first year of the project.

6. The E5 group made moderate developmental progress during each year of the experimental program and sustained their educational level in public school during second grade.

7. The language deficits of high risk children resist improvement. The language deficits assessed at age five in the E5 experimental children still exist after two years in the Learning to Learn Program although the deficits have significantly decreased. The language deficits assessed at age four in the E4 experimental children were overcome after three years of participation in the Learning to Learn Program. The additional year beginning at age four appears to have alleviated their language disability.

8. The reading ability levels of the E4 group are higher than those of the E5 group.

9. Improvement in mathematical ability occurs much faster than improvement in language functioning. The E4 and E5 children attain proficiency in mathematics ability irrespective of their beginning IQ.

10. The E4 subgroup comparisons, based on different beginning intelligence levels, indicate that all subgroups benefitted intellectually from their participation in the Learning to Learn program.

11. The E5 subgroup comparisons indicate that only the upper and middle subgroups benefitted intellectually from their participation in the Learning to Learn Program.

12. Beginning the experimental program at age four has greater educational payoff than beginning at age five for high educational risk children.

13. The Learning to Learn Program has developed a sequential comprehensive curriculum and methodological approach that is successful in educating high risk poverty children during nursery school, kindergarten, and first grade.

S. Gray and R. Klaus, The Early Training Project, Demonstration and Research Center in Early Education (DARCEE) (Klaus and Gray, 1968; Gray and Klaus, 1970). The Early Training Project was an early (1961) intervention attempt to offset the progressive retardation of disadvantaged children. Its two major tasks were to create motivational patterns in the child more conducive to school success and to develop situations, materials, and instructional techniques that would provide the child with the skills and understandings that must accompany motivational changes if the child is to succeed in school. In general, the project centered on two broad classes of effects: (1) the development of attitudes related to school-like achievement--i.e., achievement motivation, persistence, ability to delay gratification, an interest in school-type activities, and identification with achieving role models; and (2) the development of aptitudes defining school achievement with an emphasis on perception, concept formation, and language.

The project involved sessions for ten weeks (five days per week, four hours per day) during the summer and a weekly home visitor program during the winter. The latter was designed to provide continuing supportive activity. Three general differences existed between the summer session and most traditional preschool projects: (1) the way in which traditional materials and equipment were used; (2) the ratio of adults to children (1:7) and the teachers' specific training to enable them to offer highly individualized instruction, to provide appropriate identification figures, to give immediate reinforcement, and to promote large amounts of verbal interaction; and (3) the relative commitment of time to different materials and equipment.

According to Gray and Klaus (1970), evaluation of the Early Training Project after seven years showed a positive effect upon the experimental children across several measures of intelligence and achievement--an effect that was sustained through two years of public schooling. The rise in intelligence was fairly sharp, then leveled off, and finally showed a decline once intervention ceased. The comparison group (a segment of the normal disadvantaged population) experienced a slight but constant decline after entering school, except for a slight jump in test scores upon school entry, both of which are common research findings.

The gains on the various tests showed by the experimental group were modest and not suggestive of basic changes in functioning level, but were maintained at a statistically significant level ($p < .05$) for at least four years (i.e., through the first grade).

However, few significant differences were found from the assessment of personal-social characteristics, a result attributed to the paucity of reliable measures. Also, the researchers report both horizontal (between experimental and local controls and their younger siblings) and vertical (within families of the experimental group, from mother to younger sibling) diffusion of the positive effects of preschool intervention, suggesting that intervention programs may have effects that go beyond the immediate children involved. Similarly, the school attended may be important. Those few children who attended an integrated school, previously all-white, did significantly better on achievement tests than a matched sample of experimental children attending an all-black school. Both home and public school environments are influential in offsetting progressive retardation.

Miller and Dyer (1970) has attempted a replication of the DARCEE program. She found that the IQ scores of the DARCEE children were higher than those of controls after both two and eight months of the program. In addition, the children scored in the average range on the Metropolitan Readiness Test after DARCEE preschool and regular or Follow Through (Bushell) kindergarten. During preschool, persistence, resistance to distraction, and inventiveness (as measured by portions of the Cincinnati Autonomy Test Battery-Banta, 1970) increased. Behavior rating scales suggested that the DARCEE children improved more than controls in the areas of self-confidence, independence, and verbal-social participation.

M. Deutsch, Institute for Developmental Studies (Deutsch et al., 1967; Deutsch et al., 1971). The curriculum goal of the Institute for Developmental Studies program has been to provide a sequence of compensatory early education experience, beginning in pre-kindergarten and ending in Grade 3. At the pre-kindergarten and kindergarten levels, the curriculum goal is to be achieved (1) by establishing a structured psychological and physical environment conducive to the development of independent learning and cognitive skills; (2) by developing curricula in beginning reading skills, language development, and concept formation; (3) by building on strengths and skills the children develop as they progress; (4) by developing feedback devices that enable a teacher to assess competencies; and (5) by sensitizing teachers to children's needs and conducting inservice programs.

The IDS preschool classroom environment is essentially that of a traditional nursery school or kindergarten. The room is divided into a number of unit areas: the doll corner, the block corner, the library, the quiet work area, the large motor area, etc. In addition, certain auto-instructional devices and published curricular materials are used, such as the Listening Center, the Language Master, and the Edison Responsive Environment Instrument. Teachers are encouraged to try new curricula and methods as long as they concentrate on an orderly and sequential presentation at an appropriate developmental level.

Along with the development of language, perception and cognition, this project stresses socioemotional development. There is no particular affective curriculum. However, materials such as mirrors and cameras are viewed as means to the creation of positive self-images.

The role of the teacher in the IDS project is to instruct the children by acquainting them with the materials available at the correct developmental level and in the right sequence. The teachers in turn are supervised by teachers more familiar with IDS goals and methods. They also attend inservice training programs.

In addition, the IDS project includes a parent program whose goal is to increase continuity between home life and school life for the child. A Parent Center staffed by a team of social workers, community aides, and educational specialists, was established to create the parent program. This program consists of three major categories of activities; those centered on the classroom and educational activities, those involving relationships between parent and teacher, and those involving family life problems. In addition, social services are provided in conjunction with community agencies.

Results are available on four groups of children who have completed the IDS program through the third grade. These experimental children scored significantly higher than controls on intelligence measures both immediately following the pre-school program and at the end of third grade. However, a cumulative deficit effect was apparent for all children. In addition, after the second and third grades, children in the project scored significantly higher than controls on reading achievement tests and on the Illinois Test of Psycholinguistic Abilities.

B. Caldwell, Center for Early Development and Education, Little Rock Arkansas (Center for Early Development and Education, 1971). The Center is a combined day care and educational project for children six months to eleven years old. It is jointly sponsored by the Little Rock Public School District and the University of Arkansas. The Center is located in the Kramer School, an elementary school in a depressed neighborhood.

The Center is made up of two divisions, the Preparatory Division for ages six months-six years and the Elementary Division for ages six years to eleven years. The Preparatory Division is divided into four groups: children aged six months to three years, three years, four years, and five years. The staff child ratio is 1:5. Teacher-structured activities are balanced with child-initiated activities. Social and affective development are considered to be as important as cognitive development. Language development and competent communicative skills are stressed through a concrete-to-abstract sequence of experiences.

In addition to the educational and day care programs from 7 am to 5 pm, the Center serves as a community center available to local residents in the evening.

Training programs for teachers and child care aides, a broad adult education program, and supportive family services are available through the Center also.

Effects of the Preparatory Division (three, four and five year olds) are available for the first year of operation only. The results indicate that in general the Kramer children made greater gains on most cognitive measures than control children, but few of the children made great enough gains to achieve age norms. Patterns of gain and loss were not consistent among the three age groups. No non-cognitive effects are reported.

Fresno Preschool Program, California (It Works, 1969; Wargo et al., 1971). The Fresno Preschool Program began as a pilot project in 1964 and by 1969 it was serving 750 disadvantaged Mexican American, black, and white children, ages three to five. The program emphasized language, cognitive, motor and social skill instruction in small discussion-activity groups. Each class consisted of 15 children, one teacher, an instructional aide, and a parent or community volunteer. The children met in groups of five per teacher for discussion but were free to explore, select activities and pace themselves the rest of the time. Activities included experiences in language, music, arts and crafts, science, health and safety, games and educational toys.

In addition to their involvement as classroom aides, parents attended bimonthly meetings and went on study trips with the class. Health services also were provided for the children.

Evaluation reported indicates that the program was effective in immediately raising the IQ of all three ethnic groups by approximately 10 to 15 points. Generally, the order of mean IQ scores among the three ethnic groups did not change; the whites out-performed the Mexican-Americans, who out-performed the blacks.

A follow-up evaluation of arithmetic and reading achievement test scores in grades one through three indicated that the preschool experience had a slight but insignificant effect on reading scores only.

New Nursery School (Kelly, 1970; McAfee, 1972). The New Nursery School has defined five primary objectives: (1) increasing sensory and perceptual acuity, (2) developing language ability, (3) developing conceptual ability, (4) developing problem-solving ability, and (5) developing positive self-concepts. The learning philosophy adhered to requires that the child (1) be encouraged to choose his own activities and set his own pace and style, (2) be actively and physically involved in the learning process, (3) be encouraged to experiment, explore, and make his own discoveries, and (4) participate because he is interested and wants to learn, not because of external rewards.

The above objectives are pursued by the development of a "responsive environment" in the classroom. A variety of equipment and materials are provided to encourage experimentation and exploration. The child is free to choose activities and to pace himself. The activities are meant to be "intrinsically" rewarding, i.e., the rewards relate directly to the task at hand, and to provide immediate feedback. Many of the activities are open-ended; there are no "correct" answers or methods.

The teacher's role is to be responsive to the child by valuing his exploration and discoveries. The teacher helps the child express his interests and fulfill them by activity selection. Although he assists the child in modes of problem-solving, he does not provide answers. Teachers spend a good deal of time interacting freely with individual children or self-constituted small groups of children.

Results are available on five groups of children who have attended the New Nursery School and entered public school. The New Nursery School children showed immediate but small gains on a variety of cognitive measures. This slight advantage over comparison groups was maintained over a five year period. These children also showed a slight advantage over a comparison group on achievement measures. In addition, the New Nursery School children had superior attendance records, which may account for better school performance.

The New Nursery School has mixed disadvantaged Mexican-American children with Anglo middle-class children. The Mexican-Americans received the same basic curriculum plus 15-20 minutes a day of individual or small group instruction in Spanish. However, no evaluation data on language development are available.

Tucson Early Education Model (Henderson, 1970). The Tucson Early Education Project originated as a cooperative effort between the Tucson school district and the University of Arizona to improve the chances for educational success of young Mexican-Americans. Its four major objectives were to develop language competence, an intellectual base, a motivational base, and societal arts and skills.

The principal components deal with process and organization. Process components include individualization, imitation, gratification, generalization, and orchestration. Organizational components have to do with room arrangement, interaction, behavior options, adaption to local populations, planning, and psychological service, and parent involvement. How these components translate into a classroom project was not spelled out in the documentation we had available.

Free choice activities, flexible small groups, structured activities, instructional kits, and library materials are all considered basic. A variety of activities are encouraged and available, but the children are free to choose and to work as long as they want. Instructional kits are presented by the teacher and consist of an assortment of materials which have attributes in common that define the concept to be developed. Apparently emphasis is placed on academic abilities such as reading and writing.

Rough Rock Demonstration School (Bernbaum, 1971). This project is a bilingual preschool and elmentary school program for Navajo children. Its objectives are to develop the child's competence in Navajo and English, to turn both languages into tools of thought, and to develop a bicultural outlook. The basic approach is to teach each language under appropriate cultural and environmental conditions; i.e., Navajo is taught in a Navajo environment by Navajos, English in an Anglo environment by English speakers.

Children are grouped on the basis of language ability and time spent in class. The use of English is gradually increased from none upon entry to a full-time in some cases. Traditional academic studies, Navajo culture, and language facility are emphasized.

Southwest Educational Development Laboratory, Early Childhood Learning System (Nedler, 1970; Perry, 1971). This project began specifically as an attempt to improve the general development of disadvantaged Mexican-Americans. It seeks to achieve four general goals: (1) to strenghten the child's self-concept; (2) to develop sensory-perceptual skills; (3) to develop language skills in both English and Spanish; and (4) to develop thinking and reasoning skills. An instructional system was developed in the three major areas of sensory-perceptual skills, English language skills, and thinking and reasoning skills.

The resulting curriculum consists of a sequenced series of lessons in each skill area. Each lesson activity is written in behavioral terms that indicate what the child should be able to do upon completion of the lesson. The lessons are presented in content units in order to maintain interest. Each unit consists of five to seven daily lessons, the actual subject matter being related to the child's experiences. Materials within the classroom are changed or rearranged every week or two.

Bilingual instruction is used. Three-year-olds receive instruction in Spanish until the middle of the year when there is a gradual shift to the use or more and more English (20% first year; 80% third). Structured lessons are used to provide a systematic approach to vocabulary building and sentence structure. Teachers function as language models and monitors.

The typical class of 18 children is divided by ability into groups of six children. All cover the same materials except the faster groups receive expanded tasks. Lessons are scheduled so that the children experience a mix of large and small groups, active and academic activities. The teacher works with an assistant; both follow a specially written manual, which loosely outlines a rationale and guidelines for the classroom.

The parent involvement component of the **project** includes teaching parents how to use classroom materials at home and the use of the media. Parents are taught specific teaching skills and watch a television show for three-to five-year-olds, Los Ninos, part of which is devoted to parents. The show emphasizes parent involvement with children at home.

Results are available from a public school test site during the 1969-1970 school year and are compared with results from groups attending a day care center and a parent education program. The children in the Early Childhood Learning System and the control children did not consistently differ in performance on Raven's Progressive Matrices. The Auditory Test for Language Comprehension was administered to experimental children but pretest-posttest comparisons were not made.

Socio Emotional Development

The curricula of typical projects in this category emphasize social and emotional development. Intellectual growth can take place only when the whole child is well adjusted; early ~~learning~~ is primarily a function of maturation but rests on the foundation of socioemotional adjustment formed through interpersonal relations in early childhood. These curricula are the oldest and most 'middle-class'. Unlike most curricula falling within the preacademic and cognitive enrichment categories, these curricula did not result from the growing emphasis on eliminating disadvantage. They represent an adoption of the preschool programming that grew out of the child study-nursery school movement of the twenties, and they continue to be the most common type of preschool curriculum for middle-class children.

Within the "traditional" orientation, the child's disadvantage is viewed as a lack of the "enriching experiences" common to middle-class children (e.g., trips to the zoo, stories read to them, music) and the absence of values and role expectations congruent with those of the public school. Changing the child rearing patterns of disadvantaged families is considered important and work with parents is generally stressed.

The goals of project planners within this category are difficult to define behaviorally. They are more or less generalized goals (virtues) derived from the middle-class norm rather than specific outcomes defined in terms of acquired behaviors and information. For example, it is desired that the children develop trust, a positive self-image, and the ability to get along with other people. Independence and self-discovery are stressed. None of these can be objectively and reliably measured at this time.

The curriculum strategies resulting from this stress on socio emotional adjustment are frequently operationally vague and teacher-dependent. The teacher's role is to act in accord with her general theory of child development. She plans activities and creates a supportive environment which is conducive to the child's self-discovery through free choice. She is then free to interact with the children as she deems fit at the time, and she capitalizes on informal and incidental learning.

Howard University Nursery School (Herzog, Newcomb and Cisin, 1971; Kraft, Fuschillo and Herzog, 1968). The Howard University project was an attempt to offset the difficulties encountered by disadvantaged children in school by an early (ages three to three and one half) intervention in the form of a traditional middle-class nursery school project with no "enrichment" features added. However, the Howard University nursery school differed from the traditional in two ways: (1) it offered a more intensive traditional program (five days a week; seven hours a day; ten months a year for two years) and (2) there was a concurrent parent education project.

The parent education component consisted of a weekly activity-oriented meeting, where parents met at the school and worked on school-supported projects such as making clothing and games for their children. There were also informal discussions led by an adult activities worker, field trips, and special parties. During the second year more one-to-one contacts between the activity worker or teacher and the parents were encouraged. Parents visited and worked in the classroom and were visited at home.

The preschool curriculum was the traditional story-telling, dramatic play, music, nature walks, field trips, etc. Due to the length of the school day, breakfast, lunch and a snack were provided and the children received more intensive doses of all activities. The usual class consisted of one teacher and twelve children.

The immediate effects of the nursery school project were to raise IQ's a mean of five (Peabody Picture Vocabulary Test) to ten (Stanford-Binet) points the first year and five points the second year (total 15 points), in comparison to a range of control mean changes from -6 to +4 over the two-year period; and to raise language ability (Illinois Test of Psycholinguistic Abilities) significantly but not to the norm. As is generally found with traditional programs, the rate of gain in IQ slowed significantly during the second year. This trend was related to SES; those children in the highest SES categories made the greatest gains the first year and showed no gain or a decline in the second. The lower and middle SES children made continuous gains for the two-year period. There were no significant differences in total gain between the highest and lowest SES children. Those children with the lowest initial IQ scores gained the most in general. If low initial IQ scores and high SES were combined, IQ gains were not only high but also appeared in the first rather than the second year.

Parent participation per se was not related to IQ gain, although the children of those parents who initiated more contacts with the project gained the most the first year and least the second--as did the higher SES children.

Long term results are available in draft form (Herzog et al., 1971). After two years of nursery school, the experimental group continued together in a special kindergarten. In first and second grades, the group was split in half and each half mixed with an equal number of regular public school children. In third grade all the children returned to their neighborhood schools. During K-2nd grade, the experimental groups' mean IQ remained above that of the controls' and their initial mean IQ but regressed gradually to the level found before kindergarten. The patterns of experimental and control scores over the years were similar.

An examination of the three variables of sex, SES, and initial IQ revealed that: (1) the mean score for the boys in each group remained consistently above that of the girls; (2) in both groups the mean scores for high initial IQ and high SES were consistently higher than those with low initial IQ and low SES; (3) the high SES children tended to gain more and retain gains longer than did low SES children; (4) children with high SES and low initial IQ did consistently better than children with any other combination of SES and initial IQ.

The researchers concluded that the traditional nursery school program was inadequate to help those who need help most, children with low SES and low initial IQ.

E.K. Beller, Get-Set Nursery, Temple University (Beller, 1972; Beller, 1969). This project was begun by the Philadelphia Public School System as a nursery program in four different slum schools. In addition to providing a nursery school experience for disadvantaged four-year-olds, the project was concerned with training teachers to work with young and with disadvantaged children.

The nursery school classes met four half-days per week; the fifth day was reserved for inservice training and home visiting. Each class consisted of 15 children, an experienced teacher, and a college-educated assistant. The actual educational program was described as a traditional, child-centered nursery school experience. Creativity and self-discovery within a warm, nurturing environment had first priority. However, self-initiated activities were balanced by structured activities. The structured component concentrated on training in language, auditory and visual discrimination, listening and paying attention, conceptualization, information about the environment, motor coordination and control, and self-esteem.

In addition to the regular nursery school, both inservice teacher training and a social work component were important parts of the project. Home-School Coordinators, who were neighborhood people, attempted to bridge the gap between the home and school by visiting homes and helping families with problems such as housekeeping. Social workers were involved in a health program and in coordinating the services of a variety of social service agencies.

Three different types of measures were used to assess development in the area of intellectual functioning: standardized IQ tests, measures of academic achievement, and a measure of cognitive style. The results of a comparison of children who began school at ages four (nursery), five (kindergarten), and six (first grade) generally demonstrated the positive effects of earlier educational intervention, especially on girls, although this finding varied with the measure used. Those children who entered earliest gained the most and declined the least over time (through grade four) on measures of IQ. Measures of academic achievement in five major subject areas (arithmetic, spelling, reading, science, and social studies) in grades one to four demonstrated significant differences in favor of early intervention for girls. These differences decreased over time but maintained the same order. Results for boys were both less marked and less consistent. However, the earlier intervention affected the boys' cognitive style in the direction of greater reflectivity while having no effect on the girls.

A variety of motivational and socioemotional measures were used to assess the impact of early intervention. These included measures of self-concept, moral judgment, dependency conflict, aggression, autonomous achievement striving, and dependency on adults. For each result there were a number of possible meanings. However, the measures generally demonstrated that the timing of early educational intervention had a positive socioemotional and motivational effect on girls. The earlier the intervention, the more likely a child was to benefit. Motivational variables were positively related to intellectual functioning, but this relationship was not found for academic achievement in the classroom.

Durham Education Improvement Program (Spaulding, no date). This project was originally intended to create a small school system for children ages two to ten. It included nine components:

1. An infant evaluation project--a longitudinal study of 45 children from birth to 24 months.

2. Preschool programs consisting of two kindergarten classes, one with a behavior modification orientation and one with a Piagetian-based curriculum, and a traditional nursery class for two-year-olds.

3. Ungraded primary classes (grades one to three).

4. A future parent program aimed at preparing junior high students to assume family responsibilities, to achieve a higher standard of living, and to remain in school.

5. Research and evaluation.

6. Social work.

7. Information for parents concerning the Education Improvement Program.

8. Health services-screening, immunization, emergency care.

9. Psychological consultation service to classroom teachers.

At first, a variety of classroom approaches existed within a number of target areas. Curriculum planning and development were left up to individual classroom teachers within certain specified guidelines. However the general trend over the years was to adopt a behavior modification approach. The staff attempted to provide a structured environment with prearranged concrete materials and specified teacher behavior. Teachers were trained to use a "coping analysis schedule for educational settings" (CASES) to guide them in developing new response systems (coping behaviors) which the children could use at home and at school.

For example, coping styles were defined for use in different settings--conforming in teacher-directed settings, independent in all other academic settings, peer-oriented or independent in free settings. Teachers observed the behaviors presently being used in each setting by the children and designed individual treatment plans to change behaviors considered inappropriate to those settings. Reinforcement schedules were set up.

Within these guidelines for teacher behavior and physical environment, each teacher was free to plan her own daily schedule. The preschool program lasted for half a day and resembled a traditional nursery school in activities if not in philosophy.

Research and evaluation of E.I.P. involved a series of short term, special, single-case and matched-group studies examining the effects of specific experimental interventions. The results were summarized as follows:

(1) Socialization

Changes in social behavior were found to be more a function of specific setting variables than entry age. Among the relevant setting variables, teacher behavior was found the most salient. Social reinforcers and limit setting behaviors (on the part of adults present) were found to shape pupil social behavior independently of age of entry to EIP treatment programs. The longer a child remained in EIP the more independently productive he became in non-teacher-directed classroom settings, without concurrent decrements in conforming and cooperative behavior in teacher-directed situations.

(2) Intellectual Development

Children with no pre-school experience were found to decline rapidly in tested I.Q. during or shortly after the second year of life. This decline amounted to a total of approximately 10 to 15 points during the third and fourth years. After about age four or five the decline slowed to 2 or 3 points per year.

EIP experimental programs were found to reverse the decline in tested I.Q. Experimental subjects gained, on the average, a total of 5 or 6 points during their participation in EIP programs. Gains made early in the experimental programs were not washed out after two or three years of EIP school experience.

Control group children were observed to have constant I.Q. scores after entry to public school.

The younger a child entered an EIP sequence of educational programs the higher he was likely to score on the Stanford-Binet at exit. This result was due, apparently, to the fact that the younger children's I.Q. had, at entry, declined less (in comparison with the I.Q.'s of children of older entry ages) rather than to differences in program efficiency at various chronological ages. Length of EIP treatment was not found related to gains in tested I.Q. Similar gains in I.Q. were observed in children whether they experienced one or more years in EIP. Losses were not observed to follow gains made early in EIP programs.

The distribution of I.Q. scores obtained by EIP subjects at exit approached a normal probability curve, with a mean of approximately 5 points less than the test norms. A bimodal distribution observed at entry was no longer apparent at exit.

(3) Language Development

EIP treatments were not found to have different effects on language (ITPA) development in comparison with children in various control groups. However, the EIP educational programs were found to be significantly more effective if continued for two school years or more in comparison with a one year EIP intervention. Also, the EIP programs resulted in significantly greater ITPA gains among experimental children when they were enrolled for two or more years with an entry age of four (in comparison with other lengths of treatment and ages of entry).

(4) Academic Performance

Children in EIP programs were found to perform significantly less well than children at the end of the first year of primary school (normally called first grade). By the end of the second or third year of EIP ungraded primary experience, EIP pupils on the average scored higher (on most sub-tests of the MAT) than their controls, but the differences were non-significant. EIP children did not (on the average) achieve above the national MAT norms.

Losses in position relative to MAT norms were experienced by EIP pupils after departure from EIP programs and entry to the public schools. Control children showed similar losses relative to the MAT norms. EIP graduates in the first and fourth grades of public school were not significantly different in MAT performance from their public school matched controls.

Age of entry did not appear to be a factor in these findings, however, most of the children entering EIP at 2, 3, or 4 years of age had not reached the second or third year of the elementary school when the project was terminated. Readiness data on the graduates of the Infant Project (now aged 4 and 5)

> suggest that these subjects are likely to perform in a superior fashion at entry to public school. Since they will not enter EIP ungraded primaries, it will not be possible to test the effects of the EIP primary programs on children who have been observed and tested since birth and educated in EIP pre-schools since two years of age. Their EIP experience will end when they complete kindergarten in the Spring of 1971.
> (Spaulding, no date, p. 78-79)

Bank Street (Huron Institute, forthcoming). The Bank Street project is conceived as a developmental approach to the self-growth of the "whole child". Learning and healthy emotional development are viewed as interwoven rather than independent. Direct experimentation and play within the context of a predictable school environment are the essentials of learning. The objectives of the project include enabling every child to become involved and self-directed in his learning, fostering a positive self-image, increasing the child's ability to engage in group interactions, and improving his ability to cope with his environment both in and out of school. A child who is socially and emotionally adjusted with learn best.

The children engage in both group and individual activities within a classroom that is divided into interest areas. Materials are plentiful and the children are encouraged to select a variety of activities. Spontaneous groupings are encouraged. In addition, all the children are expected to participate in planned group activities that originate in the classroom (such as cooking) and extend to the community (such as grocery shopping).

The quality of the teacher-child relationship is stressed. The teacher serves a model of the trustworthy and helpful adult. He or she responds to the activities chosen by the child and further elaborates them while questioning the child about his feelings and thoughts. (Verbal interactions with the children are important.) The responsibility for curriculum development lies with the teacher, who must plan in response to the current and long-range needs of the class. Therefore, an important aspect of the Bank Street Project is training teachers to be responsive to the individual emotional and cognitive needs and growth potential of each child so that the teachers are able to develop individualized curricula and create the appropriate environment for learning.

There are no experimental data concerning the effectiveness of the Bank Street preschool with disadvantaged children. The Bank Street program is based on a substantial history of work with a middle-class preschool population and only a recent adaptation to lower-class children.

Education Development Corporation (Maccoby and Zellner, 1970). The EDC model emphasizes self development for children, teacher, and classroom. It is an approach to education which focuses on the teacher as advisor and consultant rather than as a propounder or disseminator. The basic assumption is that people learn best under conditions of free exploration. They should be helped to do what they want. Therefore the fundamental aim is for children to assume responsibility for their own learning. Specific objectives include literacy, curiosity, commitment, imagination, self-respect, and a sense of humor.

The EDC classroom is flexible. The children have a free choice of activities throughout the day. They may work individually or in groups on activities of their choice. An abundance of materials are provided; all materials are potentially legitimate although the use of programmed materials is not preferred. The role of the teacher is to provide a variety of materials but not to structure their use. He or she is to act as a resource person rather than a director of events. In this role, the teacher advises and encourages the children's creative use of materials.

The EDC model operates under an advisory system. Projects implementing their model are helped by local EDC advisors and advisors from EDC in Newton, Massachusetts. The advisors work with project staff in much the same way as teachers work with children.

Head Start Planned Variation Study

The summaries given above were offered in an attempt to characterize the present practice of center-based preschool intervention. The export of the ideas, practices, and materials found useful in such programs has been distinctly limited. Some--for instance, Bereiter--have been copied and tested at secondary sites. Most projects have had a wide, informal, and largely imponderable general influence. People visit the project. Teachers are trained there and work elsewhere. Materials are published. It is rare to find full and detailed written transcriptions of a preschool program, but aspects of program approach, strategy, and philosophy do find their way into print and undoubtedly do have an influence.

Can one identify a successful project at its home site and then export the project to other sites? This is an important question for a national program of preschool work. We have discussed, above, the issues in identification of a successful project. The issue of systematic or planned export is being addressed for the first time, along with other issues, by the Head Start Planned Variation Study. The first data from this effort only became available last year and are by no means definitive.

The Head Start Planned Variation Study is a research program in early education funded by the Office of Child Development. Its objectives are (1) to compare the short-term and long-term effects of well-defined approaches to early childhood education and (2) to assess the cumulative impact of a continuous, systematically coherent program from the preschool years through the early elementary school years in conjunction with the Follow Through program (see the elementary education section, Chapter 7).

During the pilot year (1969-1970), eight distinct models of early childhood education were included in the study; four have been added since then. Seven of the original eight have been described in the previous section, either in [illegible]r original pilot project form or in the form implemented by Head S[illegible] They are:

(1) EDC pragmatic action-oriented model

(2) Becker-Engelmann academically-oriented preschool model (Bereiter-Engelmann)

(3) Bushell behavior analysis model

(4) Bank Street College model

(5) Tuscon early education model

(6) Nimnicht responsive model (New Nursery School)

(7) Weikart cognitively-oriented model (Perry Preschool).

The 8th, Gordon's Florida parent educator model, is discussed in Chapter 10 on family intervention.

The Stanford Research Institute's report of the first year results has been summarized by Bissell (1971). The different models were grouped into three categories (preacademic, cognitive discovery, and discovery) and their effects were compared with those from regular classes. The results included the following:

--Preacademic projects were more fully implemented than cognitive discovery or discovery projects.

--There were no statistical differences in IQ gains among the three project types and regular classes, but all gained a measurable amount.

--On measures of response style there were no significant differences in gains in appropriate response inhibition but all children improved. Children in discovery classrooms made the greatest gains in motor inhibition. Those in preacademic programs showed the largest decrease in unnecessary verbal elaboration and the greatest increase in passivity.

--On measures of maternal-child interaction style, maternal verbal communication, maternal regulation, child verbal responsiveness, and child success increased for all project types.

Other Delivery Systems

Until this point we have been looking solely at classroom preschool projects for the disadvantaged. However, there are other delivery systems for educational programs for three-to five-year-olds. One such delivery system is the mass media, especially television. In total number of children reached, it is potentially the most ubiquitous. In addition, television can be used to reach rurally isolated and migrant children. Sesame Street represents the one nationwide preschool effort of this type.

Another delivery system useful with rural and migrant children is the mobile classroom. A number of projects (Howse, 1971) have utilized mobile units, often in conjunction with television and home visit programs, to teach children who otherwise might not be able to attend preschools. The SEL Readimobile and the AEL Early Childhood Education Program are two examples of the use of this delivery system.

Finally, the general use of educational technology is related to all three of the above. This includes the use of computers in programmed instruction, such as the Edison Responsive Environment (talking typewriter) used by Deutsch's I.D.S. and the New Nursery School, the use of video tapes or close-circuit television, and other mechanical aids. Such delivery systems may be incorporated in a number of settings--the classroom, the home, or portable "learning centers". At this time, their potential at the preschool level remains relatively unexplored.

Sesame Street, Children Television's Workshop (Ball and Bogatz, 1970; Bogatz and Ball, 1971a, 1971b). Sesame Street, developed by the Children's Television Workshop, is a regularly televised educational program for preschool (ages three to five) children. It is oriented toward teaching children a number of specific facts and skills prior to school entry and does not have IQ increases as a specific goal. The show itself can be complemented with various written and recorded Sesame Street materials.

To date two evaluations have been done by the Educational Testing Service. Research results from the first year on tests designed specifically to measure the skills taught indicated that (1) children who watched the most learned the most, (2) the skills which received the most time and attention on the program itself were the skills best learned, and (3) formal adult supervision was not required for the program to be effective in teaching. These findings held across sex, race, age, geographical location, SES, mental age, and home or school watching. Three-year-olds gained the most, five-year-olds the least.

Results from the second year evaluation reconfirm those of the first year study. In addition the following new findings are reported:

> READINESS FOR SCHOOL--Teacher evaluations suggest that the more frequent viewers of first-year Sesame Street programs were better prepared for school than the infrequent viewers among their classmates. More importantly, no basis could be found for fears expressed by some observers that Sesame Street viewers, accustomed to a fast-paced entertaining television format, would be "turned off" by conventional classroom instruction when they started school.
>
> ENCOURAGEMENT--Encouragement of children to view the program, carried out by community people, was an important factor affecting the gains among viewers.
>
> ATTITUDES--Measures of attitudes, employed this year for the first time, showed gains in favorable attitudes toward school and toward people of other races among at-home viewers of both program series.
>
> RESULTS BY AGE--Overall gains among 3-, 4-, and 5-year-olds were about equal, indicating the show is having a positive effect at all of the age levels for which it was designed.
>
> SIDE EFFECTS--Gains in vocabulary, mental age, and IQ never have been objectives of Sesame Street. But the new research suggests that, as a side effect, the program may be having a positive impact in these areas or at least in viewers' performance on one of the standardized tests used with preschool children."
> (Bogatz and Ball, 1971b, p. 2-3).

Table 8.4 offers a more detailed summary of results.

Southeastern Education Laboratory Readimobile Project (Howse, 1971; Parker, 1970). This project delivered a structured curriculum to rural disadvantaged preschoolers by means of a remodeled school bus in a number of Southern school systems. The basic goals of the project were

> (1) To provide readiness experiences for children that make them more receptive to formal school programs and to benefit more fully from formal instruction.
>
> (2) To establish communication with isolated groups so that they can gradually become aware of other programs (health, education, legal, etc.).
>
> (3) To expose children to other cultures, so that they can become aware of the dimensions of the world and their own place in it.

TABLE 8.4

SESAME STREET TESTS*

Tests were administered in
these subject areas to determine impact
of second season broadcasts.

Year 2
* signif gains
+ gains
- no gains

Naming Body Parts +
Function of Body Parts *

Naming Forms *
Recognizing Forms

Roles of Community Members *

Matching by Form *
*Matching by Position

Recognizing Letters +
Naming Letters *
*Letter Sounds
Initial Sounds +
*Decoding +
*Reading
*Left-Right Orientation +
Alphabet (A to Z)

*Recognizing Numbers
*Naming Numbers
*Enumeration
*Conservation
*Counting Strategies +
*Number/Numeral Agreement +
*Addition & Subtraction +
*Counting (1-20) *

Relational Terms *

Classification *
*Double Classification+

Sorting *

Parts of Whole

*Emotions +

**Attitude to School
**Attitude to Others
**Attitude to Race of Others
**Peabody Picture Vocabulary Test

*indicates subject areas revised or introduced in the second year programs.
**indicates tests administered to determine possible side effects of the programs.

*Taken from Bogatz and Ball, 1971b, figure 1.

> (4) To help children develop awareness of their surroundings and a feeling of their identity through group discussions on films and books.
>
> (5) To help children realize their creativity through art, music, drama, games and crafts.
>
> (6) To condition children and parents to the needs of a changing society where education means survival. (Howse, 1971, p.40).

The schoolbus was converted into a theater-style classroom. Instructional time averaged approximately two hours per week per site. During different years a variety of curriculum materials were tried out by paraprofessionals on different groups of children. One curriculum involved films and filmstrips sequenced to emphasize cognitive aspects of learning. Another used the Peabody Language Development Kit.

The most extensive evaluation carried out (Parker, 1970) did not find significant differences between different curricula groups or their controls on IQ, cognitive, or language measures.

Appalachian Educational Laboratory Early Childhood Education Program (Howse, 1971). This project was based in Charleston, West Virginia, and was established as an alternative to the traditional nursery school/kindergarten program for preschool rural children. It used three delivery systems: (1) a daily television broadcast which lasted for one half hour, (2) weekly home visits by trained paraprofessionals for approximately one half hour, and (3) weekly mobile classroom instructional sessions with a teacher and an aide, for approximately one and one-half hours.

The three delivery systems had coordinated behavioral objectives and curriculum planning. Behavioral objectives emphasized language cognition, motor, and orienting and attending skills. The mobile unit instructional sessions were divided into three periods. The first (35 minutes) consisted of individual activities such as puzzles, painting, and story telling. The second was a snack period, and the third (35 minutes) was a group activity related to the television program.

Field test results after two years of operation were described as follows:

> (1) A definite trend toward an increased language development for children in the ECE treatment groups (as opposed to a comparison group) was observed. A significant treatment effect was observed for a measure of transformational grammar. Disadvantaged children of the Appalachian region have been previously shown to have large deficits in this area of language ability.

> (2) Scores on a criterion-referenced test of cognitive objectives favored the two groups which received the mobile classroom and/or home visitors over a group which received only the television program. The two treatment groups which received visits from paraprofessionals also scored significantly higher on a measure of vocabulary level.
>
> (3) As compared with a no-treatment group, the ECE children were definitely superior in eye motor coordination and visual perception. Significant differences in favor of the program groups were found on four of five measures of perceptual ability. These differences were attributed to the emphasis on artistic and graphic activities which occurred throughout the ECE program's curriculum.
>
> (4) Children who participated in the mobile classroom gave **indication** of having developed more constructive skills than children who had received only the home visitor and the television program.
>
> (5) The television programs produced during the second year (1969-70) were more effective in eliciting responses from children, maintaining a positive attitude among children, and generating enthusiasm from children than programs produced during the first field test year. A measure of attitude toward the ECE program indicated that both parents and children have favorable attitudes, but the attitudes of both tended to become less positive in late October, early January, and late February. On a survey of general program appeal, groups of parents gave AEL's Around the Bend 51%, Captain Kangaroo 39%, and Romer Room 12% of the first place ratings. Around the Bend was not in color. Most (89%) of the ECE TV-HV-MC group parents reported that they watched the ECE television programs regularly with their children.
> (Howse, 1971, p. 25-26).

Summary Table

The following table offers a summary of the short-term and longitudinal preschool results to which we have access at this time. An attempt was made to shorten the descriptions of the results as much as possible without glossing over subtle but potentially important results. Nevertheless, the table entries should not be regarded as complete statements. Interactions

TABLE 8.5

Effects of Preschool Intervention Projects on Disadvantaged Children

Program	Replications	Number of Treatment Children (Total)	Original IQ	Comparison Groups	Instrument	Results
						Pre-Academic
Bereiter and Engelmann	2 (yr 1) 1 (yr 2)	30	low 90's	None and Control	Stanford-Binet	IQ: Initial increase IQ increased around 13 points during the first year of instruction, and 8 more points were gained during the second year, bringing the average IQ to 121.
(Bereiter & Engelmann, 1968; no date)					Wide Range Achievement Tests	Achievement: Improved (through kindergarten) After one year of preschool, scores were at beginning first grade level in reading and beginning second grade level in arithmetic; in spelling the average grade level was .52. After two years, i.e., after kindergarten, average grade level in reading was about 2.0, in arithmetic about 2.6, and in spelling about 1.8.
Preschool and kindergarten					Observation	Non-cognitive measures: Increased confidence "Perhaps the most noticeable characteristic of the children after two years of instruction was their confidence."

TABLE 8.5 (CONT)

Program	Replications	Number of Treatment Children (Total)	Original IQ	Comparison Groups	Instrument	Results
						Pre-Academic (continued)
The Learning Village (Ulrich, Louisell & Wolfe, 1971)	2	37	Varied	Traditional	Wechsler Preschool and Primary Scale of Intelligence (WPPSI)	IQ: Initial increase Only 5 of the children in this program were disadvantaged. After Learning Village preschool and kindergarten, their IQ's ranged from 101 to 130. Combining all treatment children (disadvantaged and advantaged), at the end of kindergarten the mean IQ of children involved in Learning Village for 2 years was 10 points higher than that of those involved in traditional education for 2 years.
					Metropolitan Reading Readiness, Wide Range Achievement	Achievement: Improved (through kindergarten) in reading Combining advantaged and disadvantaged children, the mean percentile ranks of children who attended the Learning Village preschool and public kindergarten; the Learning Village preschool and kindergarten; and traditional preschool and public kindergarten were very similar (80,82 and 76, respectively). However, there were differences on The Wide Range Achievement Tests, with the children who attended Learning Village preschool and kindergarten scoring higher than children who attended Learning Village preschool and public kindergarten and children who attended traditional preschool and

TABLE 8.5 (CONT)

Program	Repli-cations	Number of Treat-ment Children (Total)	Original IQ	Comparison Groups	Instrument	Results
Pre-Academic (continued)						
The Learning Village, (cont)						kindergarten. The scores of only the disadvantaged children were not given. In a separate group of children who attended only Learning Village kindergarten, however, the 8 disadvantaged children placed 90th percentile or better in reading, with a wide range in arithmetic (34th to 99th percentile) and in spelling (01 to 87th percentile).
					Anecdotal Information	Non-cognitive measures: Children happy and well adjusted. Parents and visitors report that children are happy, well adjusted, and are amazed at the "gaiety and sophistication" of the children.

TABLE 8.5 (CONT)

Program	Replications	Number of Treatment Children (Total)	Original IQ	Comparison Groups	Instrument	Results
					Cognitive Enrichment	
Karnes Ameliorative (Karnes, et.al., 1969)	1	24	96	1)Bereiter-Engelmann 2)Montessori 3)Traditional 1 4)Traditional 2	Stanford-Binet, Illinois Test of Psycho-Linguistic Abilities (ITPA)	IQ: Initial increase, decrease in kindergarten and Grade 1 Stanford-Binet IQ increased about 13.8 points during preschool, but then decreased during kindergarten and Grade 1, to 104. ITPA scores were higher after preschool, but were not different from other projects' after kindergarten and Grade 1.
Children attended preschool & then public kindergarten, plus a 1-hour supportive session daily during kindergarten					Frostig: Visual Perception	Perception: Gradual increase Scores on the Frostig gradually increased from 81 at preschool to 105 after Grade 1.
					Achievement Tests (Metropolitan and California)	Achievement: Improved through Grade 1 Performance on reading, number and arithmetic achievement tests was improved, and the effects persisted through Grade 1, at which time the children performed slightly better than normal for their age.

TABLE 8.5 (CONT)

Program	Replications	Number of Treatment Children (Total)	Original IQ	Comparison Groups	Instrument	Results
						Cognitive Enrichment (continued)
Primary Education Project (Wang, Resnick & Rabb, 1969)	11 classes in one year	197 Data here on 59 children	~95	None	Stanford-Binet	IQ: Initial gain Stanford-Binet IQ increased an average of 5 points during the kindergarten year.
					Wide Range Achievement	Achievement: Arithmetic, not reading or spelling, at normal level After kindergarten, PEP children were at early Grade 1 level in arithmetic and at a level lower than 'normal' for the end of kindergarten in reading, while spelling scores varied greatly.
					Criterion referenced tasks	Criterion referenced tasks: Improvement After the program performance on classification and quantification tasks (directly taught) was improved.
Deutsch (Deutsch et al., 1971) Program extended from preschool thru Grade 3	4	275 to 82 at Grade 3	92	Control (with and without regular kindergarten)	Stanford-Binet Peabody Picture Vocabulary (PPVT) Lorge Thorndike ITPA	IQ: Initial increase followed by decrease, but still higher after Grade 3 Stanford-Binet IQ increased 7 points during preschool and after Grade 3 was 96, 4 points above original IQ and higher than control IQ. PPVT IQ scores also increased and were higher than controls after preschool, kindergarten and Grade 3, while Lorge-Thorndike scores were higher than controls after Grades 1 and 2. On the ITPA children scored higher than controls after Grades 1, 2 and 3.

TABLE 8.5 (CONT)

Program	Replications	Number of Treatment Children (Total)	Original IQ	Comparison Groups	Instrument	Results
						Cognitive Enrichment (continued)
Deutsch, (cont)					Reading Prognosis Metropolitan Reading Test, Arithmetic Test	Achievement: Improved in reading, not arithmetic At the end of kindergarten, reading prognosis was better than for controls in word knowledge and reading. After Grades 2 and 3, the children scored higher in reading than control children who had experienced no kindergarten, and the children's mean was higher than the school norm and less than 3 months behind grade level. In arithmetic, effects of the preschool experience were minimal.
Perry Pre-School Project (Weikart et.al., 1970) Children attended preschool and kin- kindergarten	5	58	80	Control	Stanford-Binet Peabody Picture Vocabulary Test ITPA Leiter	IQ: Initial gains, lost by Grades 2 and 3 Stanford-Binet and PPVT IQ's were higher than those of controls after preschool, kindergarten, and Grade 1, but not after Grades 2 and 3. Performance on the ITPA was improved only after kindergarten. The Leiter nonverbal scores were higher after preschool, kindergarten and Grade 3, but not after Grades 1 and 2.
					California Achievement Tests	Achievement: Improved in Grades 1, 2 and 3 Achievement test performance was improved after Grades 1, 2 and 3.

TABLE 8.5 (CONT)

Program	Replications	Number of Treatment Children (Total)	Original IQ	Comparison Groups	Instrument	Results
Cognitive Enrichment (continued)						
Perry Pre-school Project, (cont)					Pupil Behavior Inventory Ypsilanti Rating Scale	Non-cognitive measures: Improved in Grades 1 and 2, not Grade 3 After Grades 1 and 2, but not after kindergarten or Grade 3, scores on non-cognitive measures such as Classroom Conduct, Academic Motivation, Socioemotional State, and Personal Behavior were improved.
(Weikart --personal communication)					Grade Placement (n=52)	Grade placement: Improved through Grade 3 83% of the children are at expected grade level in regular classes, as compared to 61% of the controls.
"Learning to Learn" (Van De Riet, et al., 1970; IT WORKS)*	1	24	not given	Controls "traditional curriculum"	Stanford-Binet Peabody Picture Vocabulary Test ITPA (4 subtests)	Reported in IT WORKS: IQ: Initial gain, lost after Grades 2 and 3 Stanford-Binet IQ was increased to 104 after 1 year and was still higher than both comparison groups after Grade 1; but after Grades 2 and 3 the effects had dissipated. The PPVT and the ITPA yielded similar results, showing the effects of the project after kindergarten and Grade 1, but not after Grades 2 and 3. (continued)

* In the Van De Riet report one group received Learning-to Learn preschool and kindergarten, and the other kindergarten and Grade 1. IT WORKS reports results of a group who attended kindergarten--and follows them from Grades 1 to 3 of public school.

TABLE 8.5 (CONT)

Program	Replications	Number of Treatment Children (Total)	Original IQ	Comparison Groups	Instrument	Results
						Cognitive Enrichment (continued)
						Reported in IT WORKS:
"Learning to Learn" (cont)					Evaluators' Observations	Non-cognitive measures: Improved The children were more free and verbal in interaction with the examiners and were more inquisitive about the testing situation than children in the other group.
						Reported in Van De Riet, et al.
	2	44	89	Controls who attended public programs	Stanford-Binet ITPA (4 subtests)	IQ: Initial gain Stanford-Binet IQ increased 19 points during preschool and 1 more point during kindergarten (to 108) for children starting at age 4 (E_4); those starting at age 5 (E_5) gained 9 points during kindergarten and 7 points during Grade 1 (IQ=106). On the ITPA E_4 children outperformed controls, with language age equal to or only slightly below chronological age by the end of kindergarten. E_5 children were better than controls on 2 subtests, but language age was still below chronological age after Grade 1.

TABLE 8.5 (CONT)

Program	Replications	Number of Treatment Children (Total)	Original IQ	Comparison Groups	Instrument	Results
						Cognitive Enrichment (continued)
"Learnint to Learn" (cont)					School Readiness Screening Test, Primary Mental Abilities, Metropolitan Readiness Test, Stanford Achievement Test Spache Diagnostic Reading Test, Academic Performance (Grades)	Achievement: Improved On the School Readiness Test, children performed better than controls after each year, with the E_4 group scoring higher than the E_5 after kindergarten. After Grade 1 the E_4 and E_5 group surpassed controls on the Primary Mental Abilities Test, the Metropolitan Readiness Test, and all subtests of the Stanford Achievement Test. After Grade 1, E_4 above grade level, C_4 mean below grade leve. After Grade 2, E_5 above grade level, C_5 mean below grade level. After Grade 2, E_5, letter grade above C_5 (average/below average).
					Teacher Ratings	Non-cognitive measures: some improvement On total teacher ratings (effort, persistence, goal-directedness, independence and fear of failure) the E_4 group scored better than controls at the end of kindergarten: after Grade 1 the E_5 group scored better than controls on 2 subtests, but not on the total rating.
					Parent Questionnaire	Parents: Made more frequent contacts with school Parents reported that children did more schoolwork at home and brought home more books to read than did control children, whereas the parents of the children made more frequent contacts with the school than did control parents.
					School Attendance	75% perfect; all missed less than 5 days a year.

TABLE 8.5 (CONT)

Program	Replications	Number of Treatment Children (Total)	Original IQ	Comparison Groups	Instrument	Results
						Cognitive Enrichment (continued)
Caldwell (Center for Early Development and Education, 1971) Preschool	1	45	87	Control	Stanford-Binet Preschool Inventory ITPA (4 subtests) WPPSI	IQ: Initial increase Stanford-Binet IQ increased 12 points and Preschool Inventory 26 points during 1 year of preschool. However the ITPA indicated no difference in favor of the children in preschool, and the WPPSI indicated few positive effects of the preschool experience.
The New Nursery School (Kelly, 1970, McAfee, 1971) Preschool and kindergarten	4	69 n=28 for results given here	Children would not take test	Control Advantaged Preschools	WPPSI Preschool Inventory	IQ: Initial gain Few (2 of 15) children would take the WPPSI at the start of preschool, but after one year all children took the test, yielding a mean IQ of 98.8. However no further IQ gain was made during the second year. After two years of nursery school at the beginning of kindergarten, the WPPSI IQ's were higher than those of a control group. On the Preschool Inventory, the children scored lower than an advantaged comparison group, but there was a reduction in the differences between the groups.

TABLE 8.5 (CONT)

Program	Replications	Number of Treatment Children (Total)	Original IQ	Comparison Groups	Instrument	Results
Cognitive Enrichment (continued)						
The New Nursery School (cont)					California Achievement Test Metropolitan Reading Readiness Task Accomplishment Inventories Belligi-Klima Test of Grammatical Comprehension	Achievement: Improved The controls for the Grade 1 sample outperformed the New Nursery children, but Grade 2 and Grade 3 New Nursery children earned mean grade placement scores slightly higher than comparison groups. After 2 years of the New Nursery Kindergarten children received a mean percentile of 51 on the Metropolitan. These tests of concepts (e.g., color, number, relative size) and language comprehension indicated that the nursery school children performed less adequately than their than their advantaged comparison group, but mean differences decreased with attendance at the New Nursery School.
					CATB Anecdotal Records	Non-cognitive measures: Improved After 2 years of preschool, there was no difference between the children and the advantaged comparison group on Impulse Control or Curiosity. On Field Independence the advantaged children outperformed the New Nursery School children after 1 year, and 2 years, but the mean difference was decreased. Children increased in ability to respond to questions in formal (testing) and informal situations, and to ask questions. They increased in their ability to select the activities.

TABLE 8.5 (CONT)

Program	Replications	Number of Treatment Children (Total)	Original IQ	Comparison Groups	Instrument	Results
						Cognitive Enrichment (continued)
The New Nursery School, (cont)					Parents	Parents: Expectations increased There was some evidence that parental expectations for their children were increased.
					Teacher Ratings of Class Standing	Teacher Ratings: No effect No differences were found between the children and control children of similar backgrounds, averaged across kindergarten through Grade 3.
					School Attendance	Attendance: Improved In general, New Nursery graduates were absent fewer days than controls.
Klaus & Gray Early Training Project (DARCEE) (Gray & Klaus, 1970; Klaus & Gray, 1968)	7	38		Control	Stanford-Binet Peabody Picture Vocabulary Test ITPA	IQ: Initial gains, decreasing to Grade 4 Results on IQ tests diverged. Stanford-Binet IQ's were higher than controls' through the end of Grade 4, but during Grade 2 IQ's began to decrease. This same trend was indicated by PPVT IQ scores, which indicated no differences between the children and their controls by the end of Grade 4. On the ITPA the children scored higher than controls after kindergarten and Grade 1, but not after Grade 2.

TABLE 8.5 (CONT)

Program	Repli- cations	Number of Treat- ment Children (Total)	Orig- inal IQ	Comparison Groups	Instrument	Results
Cognitive Enrichment (continued)						
Klaus & Gray Early Training Project (DARCEE), cont.					Reading Readiness Tests (Metropolitan & Gates)	Achievement: Improved in Grades 1 and 2, not in Grade 4 At the beginning of Grade 1, reading performance was better than that of controls.
					Achievement Tests (Metropolitan & Stanford)	After Grades 1 and 2 achievement test scores were somewhat higher than those of controls, but after Grade 4 there was no difference.
					Self Concept (Adaptation of Piers & Harris, 1964) Reputation among Peers Social Deprivation	Non-cognitive measures: No effect On these non-cognitive measures, the children did not differ from controls.
					Interviews with Mothers	Parents: More interest in school activities of child Mothers of children in the preschool reported more shared school-like activities and stressed achievement, manners, religious and ethical behavior, and regular school attendance more than mothers of controls.

TABLE 8.5 (CONT)

Program	Replications	Number of Treatment Children (Total)	Original IQ	Comparison Groups	Instrument	Results
						Cognitive Enrichment (continued)
Fresno, California Pre-School Program (IT WORKS) (Results on PPVT are for 2 yrs. on reading tests for 1 year)	6	800+	Varied	Occasional control	Peabody Picture Vocabulary Test	IQ: Some classes showed initial increase IQ increases for different ethnic groups ranged from 4 to 18 points, but not all classes gained in IQ.
					Reading Tests(Cooperative & Stanford)	Achievement: No effect After Grades 1, 2 and 3, the children read no better than those who had not attended preschool.
					Parents	Parents: More interest in own education Some parents became interested in their own education and began attending adult school.
Beller (Beller, no date) One group attended Get Set Pre-school & kindergarten; (cont)	2	105	91-92	Control	Stanford-Binet Peabody Picture Vocabulary Test Goodenough Draw-a-Man Test	IQ: Initial gains, retained through Grade 3 for preschool/kindergarten group Results on the 3 tests of intelligence varied somewhat. For the group who attended the Get Set program during the preschool and kindergarten, Stanford-Binet IQ had increased 5 points by the end of kindergarten and remained around 97 through Grade 3 (higher than the control group). PPVT IQ increased 10 points during preschool and 5 more during preschool and 5 more during kindergarten (to 91), remaining around 90 through Grade 3. The Draw-A-Man test indicated little effect of the Get Set experience. (Continued)

TABLE 8.5 (CONT)

Program	Replications	Number of Treatment Children (Total)	Original IQ	Comparison Groups	Instrument	Results
Cognitive Enrichment (continued)						
Beller, (cont) a 2nd group attended only Get Set kindergarten.						For the group who attended only Get Set kindergarten, Stanford-Binet IQ increased 2 points during kindergarten and remained around 93 through Grade 3, and PPVT IQ increased 6 points during kindergarten, gradually increasing 3 more points by Grade 3. The Draw-A-Man test indicated little effect of kindergarten; it decreased to 6 points below the initial score by Grade 3.
					School Grades	Grades: Improved Get Set children had better grades at the end of Grades 1 and 2 than children with no preschool and/or kindergarten experience.
					Teacher Ratings of attitudes to learning and school, Beller's Dependency measures	Non-cognitive measures: When teachers were asked to choose those from their classes who had the best attitudes toward school and learning, more Get Set children than children with no preschool and/or kindergarten experience were selected (Grades 1 and 2). Ratings on "able" vs. "slow" and popularity fell in the same direction but were not statistically significant. Correlations among Beller's measures indicated that Autonomous Achievement Striving was positively related (r=.23-.38) to achievement on intelligence tests and Dependency Conflict was negatively related (r=[-.21]-[-.41]). (continued)

TABLE 8.5 (CONT)

Program	Replications	Number of Treatment Children (Total)	Original IQ	Comparison Groups	Instrument	Results
Cognitive Enrichment (continued)						
Beller (cont.)						Dependency Striving and Aggression were unrelated to intelligence test scores. Children who attended Get Set preschool and kindergarten were highest on Autonomous Achievement Striving, dependency on teacher, and aggression and were lowest on dependency conflict. Children with no Get Set experience were lowest on the first three measures and highest on the latter measure.
SEDL (Nedler, 1970, Perry, 1971).		116	Above average	Day care comparison group	Raven Progressive Matrices	Non-verbal IQ: No increase Comparison and experimental 3-year-old children performed similarly, with no significant change between pre- and posttest; 4-year-old experimentals scored higher than controls on posttest, but they showed no change between pre- and posttest and there were no pretest scores for controls.
					Auditory Test for Language Comprehension	Language: Inconclusive Pre-posttest comparisons were not made.

TABLE 8.5 (CONT)

Program	Replications	Number of Treatment Children (Total)	Original IQ	Comparison Groups	Instrument	Results
						Social-Emotional
Howard University Pre-School Project *	1	30	81	Control	Stanford-Binet	IQ: Initial increase but not different from controls after Grade 2. During the two years of the project Stanford-Binet IQ rose 15 points, to 96. By the end of Grade 2 scores had declined to 92 and the preschool children did not differ from the control group.
(Herzog et al., 1971; Kraft, et al., 1968)					Metropolitan Achievement Test of Basic Skills (CTBS)	Achievement: Little improvement At the end of Grade 2, Howard Preschool children. scored higher than controls on only one subtest of the Metropolitan. At the beginning of Grade 3, the preschool children and controls did not differ in performance on the CTBS.
					Grade Placement	Grade placement: Improved At the end of Grade 3, 67% of the Howard Preschool children were at expected grade level, whereas only 53% of the control children were.
					Parents' Opinions	Parents: Offered assistance to preschool During the second year, parents more frequently offered to assist the school in some way, although they attended meetings less frequently.

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* The children attended two years of preschool at Howard University; then during kindergarten and Grades 1 and 2 the children had an "enriched classroom experience".

TABLE 8.5 (CONT)

Program	Replications	Number of Treatment Children (Total)	Original IQ	Comparison Groups	Instrument	Results
Social-Emotional (continued)						
Durham Educational Improvement Program, 1970	5-year Operation	176 all ages	low 90's	Random and Matched Controls	Stanford-Binet WISC	IQ: Initial increase, maintained 2-3 years Initial IQ gains of 5-6 points were maintained for two-three years of EIP school experience.
					ITPA	Language: No improvement over controls EIP children did not score higher than controls; however, 2 or more years of EIP was more effective than 1 year.
					Metropolitan Achievement Test	Achievement: No significant improvement EIP children performed less well than controls at end of first grade but caught up during the second and third year of primary school.
					Classroom Observation	Non-cognitive measures: No change in cooperative behavior, increase in independent productivity. No difference was found between experimentals and controls on cooperative behavior; experimentals increasingly became independently productive.

TABLE 8.5 (CONT)

Program	Replications	Number of Treatment Children (Total)	Original IQ	Comparison Groups	Instrument	Results[a]
Head Start Planned Variation						
Bereiter and Engelmann (Karnes, et al., 1969) Preschool and kindergarten	1	23 (for Grade 1 testing, n=10)	94	Ameliorative Traditional Community-Integrated Montessori	Stanford-Binet ITPA	IQ: Increase with slight drop in Grade 1 Stanford-Binet IQ increased 13 points during preschool and 6 more points during kindergarten. After Grade 1, IQ scores had dropped 3 points. After kindergarten, ITPA score was 2 months above chronological age, and after Grade 1 was slightly below chronological age.
					Frostig Visual Perception	Perception: Gradual increase Scores gradually increased from 75 at preschool to 104 after Grade 1.
					Achievement Tests (Metropolitan and California)	Achievement: Improved after Grade 1 Reading performance was no better than the performance of the comparison groups until after Grade 1 at which time average grade level was 2.17. Performance on number and arithmetic tests was improved, and after Grade 1 the average grade level was 1.80, or average.
Bereiter and Engelmann (Erikson, 1969)	7 classrooms	136	not given	Enrichment Control	Stanford-Binet	IQ: Initial increase Stanford-Binet IQ of 105-108 was attained after 1 year of preschool, 1 year of kindergarten, and after both preschool and kindergarten.

(continued)

TABLE 8.5 (CONT)

Program	Replications	Number of Treatment Children (Total)	Original IQ	Comparison Groups	Instrument	Results
				Head Start Planned Variation (continued)		
Bereiter and Engelmann, (cont)					Wide Range Achievement Tests	Achievement: Improved (through kindergarten) After Bereiter-Engelmann preschool and regular kindergarten, the achievement test scores in reading, spelling, and arithmetic showed a positive effect of the preschool experience. It appears that Bereiter-Engelmann kindergarten had a positive effect on children from the Control group and enrichment preschools. Thus Bereiter-Engelmann experience during preschool or kindergarten improves performance.
					Teacher Ratings	Non-cognitive measures: Improvement Children with Bereiter-Engelmann preschool and regular kindergarten were rated as more reality-oriented, more socially adjusted, possessing better work habits, a better home life, and as better tempered than other kindergarten children. However, after Bereiter-Engelmann kindergarten, preschool experience made no difference.
					Parent Questionnaire (n=30)	Parents: Higher expectations In both regular and Bereiter-Engelmann kindergarten, children from Bereiter-Engelmann had fewer school absences.
					School Attendance	Attendance: Improved In both regular and Bereiter-Engelmann kindergarten, children from Bereiter-Engelmann had fewer school absences.

TABLE 8.5 (CONT)

Program	Replications	Number of Treatment Children (Total)	Original IQ	Comparison Groups	Instrument	Results
Head Start Planned Variation (continued)						
Bereiter and Engelmann (Miller, 1970) 1 year of preschool, Follow Through or regular kindergarten	4 classes	64	93 (after 2 mos. preschool)	DARCEE Traditional control	Stanford-Binet Preschool Inventory	IQ: Initial gain During 6 months of preschool, Stanford-Binet IQ increased 6 points, and scores on the Preschool Inventory also improved.
					Metropolitan Readiness (n=10)	Achievement: Not improved Children in Follow Through who had Bereiter-Engelmann preschool scored in the average range, as did control children in Follow Through, but Bereiter-Engelmann children in regular kindergarten scored in the low normal range, 7 points lower than the controls in regular kindergarten.
					CATB a) Replacement puzzle b) Dog and Bone Behavior Inventory	Non-cognitive measures: Little effect Persistence increased during the preschool experience.

TABLE 8.5 (CONT)

Program	Replications	Number of Treatment Children (Total)	Original IQ	Comparison Groups	Instrument	Results
						Head Start Planned Variation (continued)
DARCEE (Miller, 1970)	4 classes	64	96 (after 2 mos. preschool)	Bereiter-Engelmann Traditional Control	Stanford-Binet Preschool Inventory	IQ: Initial gain During 6 months of preschool, Stanford-Binet IQ increased 1.5 points; IQ on both the Stanford-Binet and the Preschool Inventory was higher than controls' after 2 and 8 months of the program.
					Metropolitan Readiness (n=10)	Achievement: Improved Children with DARCEE preschool scored in the average range after both Follow-Through and regular kindergarten.
					CATB a) Replacement puzzle b) Dog and Bone Behavior Inventory	Non-cognitive measures: Improved During preschool persistence, resistance to distraction, and inventiveness increased. On scales for timidity, independence, and verbal-social participation the children improved more than controls.

TABLE 8.5 (CONT)

Program	Replications	Number of Treatment Children (Total)	Original IQ	Comparison Groups	Instrument	Results
					Other Delivery Systems	
A.E.L. Early Childhood Education Program (Howse, 1971)	1 year available	450		TV-home visit-mobile unit	PPVT	IQ: Initial increase of all 4 groups All groups, including controls, gained about 8.4 points.
				TV-home visit TV control	ITPA	Language: Initial increase of a 3-component group Groups receiving all three components scored significantly higher than the other treatment groups or controls.
					Appalachian Preschool Test of Cognitive Skills	Achievement: Initial increase No significant differences were found between TV-HV-MC and TV-HV groups, but they scored higher than TV group, which scored higher than controls.
					Questionnaire	Noncognitive measures: Improved parental attitude Parental attitude improved with home visits.

TABLE 8.5 (CONT)

Program	Replications	Number of Treatment Children (Total)	Original IQ	Comparison Groups	Instrument	Results
				Other Delivery Systems (continued)		
SEL Readimobile (Howse, 1971; Parker, 1970)		24		General Enrichment Peabody Language 9 mo. Peabody Language 3 mo.	Stanford-Binet Preschool Inventory	IQ: Initial increase Peabody 9 mo. group surpassed controls.
				Controls	ITPA	Language: No significant improvement There were no significant differences among the 4 groups.
Sesame Street (Ball-Bogatz, 1970; Bogatz-Ball, 1971)	2 years	Year 1- 943 Ss 731 disadv. Year 2- addit. 283 disadv.		Q_1-198 no viewing Q_2-197 2-3 times a week Q_3-172 4-5 times a week Q_4-164 5+ a week	ETS devised See Fig. 1	See description in preceding section for summary of results.

among project characteristics and child characteristics are not specified in the table, but some of these interactions are discussed following the table.

The tables first present results of projects implemented at their home site, then the few results currently available of projects implemented in different locations by different personnel, and finally the results of projects implemented via delivery systems other than the classroom.

Discussion and Summary

Both material on individual projects and reviews of the literature in preschool education have been considered in an attempt to determine what we currently know about the effects of preschool education on the child. A number of reviews have been written; among them are those by Butler (1970), Hawkridge et al., (1968a), Hawkridge et al., (1969), Horowitz and Paden (1972), McDill, McDill, and Sprehe (1969), Parker et al, (1970), Stearns (1971), and Wargo et al., (1971). Some of the reviews have considered compensatory education in general, including projects for preschool, elementary, and secondary students, but all have in common their inclusion of evaluative data. In addition, Parker and Tombari (1972) have just completed a "survey of surveys" in which they abstract the main issues treated by each reviewer and give a general summary of data on the effectiveness of compensatory programs.

The reviewers all come to the same general conclusions regarding the overall effectiveness of preschool projects. However, the reviewers do not always agree on their interpretation of the pattern of data or their impressions of where to go next.

In this discussion we shall briefly summarize the effects of preschool programs to date. The focus of our evaluation has been on the child, on the manner in which the child is affected by his preschool experience. Equally legitimate and important questions have to do with effects on the family and the community. These questions fall on the boundary of our domain and are discussed further on. It should be remembered, though, that effects may be diffuse and there is always the possibility that such categorization hides the most significant effects.

Effectiveness of Preschool Projects: The Child

Most evaluations of preschool projects find an immediate increase in IQ scores. The reason for this immediate increase is not clear. It could reflect a genuine intellectual progress or it could reflect a familiarity with the situation, greater self-confidence, and an increased willingness to attempt problem-solving in the test-taking context. Indeed, regardless of the school attended, a fairly universal "school entry" effect results in an increased test score after a few months of school attendance (Stodolsky, 1971). The magnitude of the IQ increase varies over preschools, however, and the differences among the projects with large gains and those with small gains thus become important.

The effects of most preschool projects on IQ scores do not persist beyond the second or third grade. Rate of gain in the preschool groups slows by the end of the first grade, while controls show an increase in scores at school entry. The gap between experimental and control children decreases. IQ scores gradually decline to a level higher than the initial IQ but not significantly different from that of comparable children without preschool experience. This "wash-out" suggests the preschool projects do not exert a permanent impact on intellectual level.

Immediate improvements in performance on achievement tests come from preschool projects which focus on specific academic skills. In some cases, achievement improvements tend to persist longer than IQ increases (e.g., Ameliorative, Perry Preschool Project), but typically, they decline in a manner parallel to that of IQ scores. The pattern of improvement in specific content areas generally reflects the pattern of concentration within the project. The amount of improvement varies with the explicitness of the objectives in terms of expected child performance, the soundness of the instructional methodology, the amount of time spent attaining the objectives, and the similarity between the instruction and the performance required by the test (Stearns, 1971).

Although long-term changes in IQ and achievement test scores are generally not found, several nontest results support the possibility of long-term advantages of preschool attendance. Bereiter (1972) reports that children who had been in a Bereiter-Engelmann preschool (Erickson et al., 1969) had higher kindergarten attendance than those who had been in a traditional preschool and than those who had not attended preschool. McAfee (1972) also found better elementary school attendance among children who had attended the New Nursery School than among comparison groups with no preschool experience. And both Karnes (1972?) and Weikart (1971) present evidence that their projects decrease the likelihood of later special education placement for experimental children. Weikart found that 83% of third through seventh grade children who had attended the Perry Preschool for two years were at their expected grade level; only 61% of the control children were. Follow Through evaluators (The Huron Institute) are currently investigating the effects of participation in Follow Through on grade retention, assignment to special classes, and assignment to ability tracks.

Weikart (personal communication) argues that from a cost perspective, the difference between experimental and control children in special education and retention data is great enough to justify spending on preschool intervention. A cost argument, would, of course, rely for support on the level of local expenditures for special education classes.

There has been still another argument for the possible long-term effectiveness of preschool projects. Beilin has argued that we should consider the proportion of children who do show long-term gains from preschool education, as well as the average long-term result:

> Whatever the origin of control over cognitive development, it appears that the educational experience provided by the limited school day is not sufficient to overcome either the effects of the child's larger social experience or genic control exercised over the acquisition of intellectual functions. While these conditions apparently hold for the group considered as an abstract totality, they do not hold for a substantial minority of children (possibly 25%) who do profit from such educational experience. Few people seem willing to accept the idea that long-term educational efforts should be concentrated on the minority children who profit from compensatory education. The great danger in the present failure of the enrichment experiment is that the successful group will be neglected through the rejection of the total effort. If 20% to 25% of each generation of minority children could reach a level of intellectual performance equal to that of successful middle-class college students (that is, without changing the present college acceptance and retention standards), then a true social revolution would occur. But it will not occur in one school generation. Those who believe that education efforts of any kind will create substantial change in intellectual performance for large proportions of disadvantaged minority students in one generation are engaged in magical thinking.
> (Beilin, 1972, p. 169-170).

Our data on the non-cognitive effects of preschools are extremely limited, reflecting a critical vacuum in efforts to determine the benefits of preschool projects on child development. Most projects include non-cognitive objectives among their areas of concern, and some projects (those we have labeled socioemotional) concentrate on the noncognitive aspects of development. Only crude measures of noncognitive variables deemed important to school success and personal adjustment are available, and there is little agreement concerning what constitutes positive change in the social and emotional domains. Most noncognitive instruments used in preschool evaluations--student rating scales, behavior inventories, and questionnaires--are developed locally. Their reliability has not been assessed and norms have not been established. For example, Wargo et al., (1971) examined the noncognitive evaluations reported by programs identified as successful in achieving cognitive objectives. They found that only four of the 30 measures used were commercially available, and none of these four was used in more than one evaluation.

Noncognitive factors are now ambiguously defined and ambiguously partitioned. They include affective and social development, neither of which are well represented in developmental theory. In her review, Stearns dealt separately with self-concept, social behavior, and achievement motivation. Tests of self-concept, unfortunately of unknown validity and reliability, yield contradictory results. She notes that programs may differentially affect the self concepts of children with varying backgrounds and characteristics and concludes...

> ...that, on the average, participation in a preschool program for disadvantaged children does not reduce the children's self-confidence, make them unhappy with themselves or make them think that people dislike them. This conservative statement appears to be the most one can assert for the time being on the basis of objective data.
> (Stearns, 1971, p. 58)

Social behavior has typically been assessed by behavior ratings. Some studies have reported more "readiness" for school in children who attend preschool. But there have been exceptions, and most differences between preschoolers and non-preschoolers have been observed during the first few days of kindergarten or first grade. We do not know if they persist. There is some indication that children who have attended a preschool may have trouble adjusting to a kindergarten or first grade with a different type of structure; in this situation "good adjustment in one teacher's classroom is maladjustment in another's" (Stearns, 1971, p. 61). However, there are inconsistent and weak data (Weikart et al., 1970; Hodges, McCandless and Spicker, 1971; Beller, 1969) that disadvantaged preschool children show an increase in desirable social behaviors, relative to comparable children without preschool, which persists into elementary school. We do not, however, know how the children compare to middle-class children, and currently have no adequate norms.

Extremely important, yet infrequently assessed, is the child's happiness and enjoyment of his preschool experience. Zigler (1971) has stated that improvement in the daily quality of a child's life is justification enough for the existence of programs such as Head Start. Furthermore, it is reasonable to think that improving the quality of daily life will influence attitudes toward life in a positive manner, although we may not currently be assessing these changes nor even know how to begin to do so.

More Detailed Analyses

Having summarized the overall effectiveness of preschool projects, we now need to look more specifically at their effects. Significant questions include (1) What characteristics distinguish between more and less successful projects?, (2) Do length and age of attendance influence amounts of positive change?, and (3) Are programs differentially effective for different children?

Characteristics of successful projects. Small, well-designed experimental programs generally produce larger gains than do large-scale public programs. The smaller, research-oriented programs effect immediate IQ gains of 15 to 30 points as compared with five to ten point gains for most public preschools, including Head Start as a whole. The two groups of programs differ in a number of ways, any or all of which could conceivably be critical: staffing (training, supervision, commitment, involvement in planning and research, selection), funding (expenditure per child); curriculum materials, adult-child ratio, articulation of goals and their relationship to instructional strategies, characteristics of the children, and so forth.

Both Hawkridge et al. (1968b) and Posner (1968) attempted to identify characteristics which distinguished successful from unsuccessful preschool efforts. Successful programs had produced cognitive gains greater than those of control groups and unsuccessful programs had not. The characteristics cited by Hawkridge et al. (1968b) were:

(1) Careful planning and a clear statement of academic objectives.

(2) Small groups and a high degree of individualization of instruction.

(3) Instruction and materials relevant and closely related to objectives.

(4) High intensity of treatment.

(5) Teacher training in the methods of the program.

Similarly, Posner (see McDill, McDill, and Sprehe, 1969) made the following recommendations:

(1) A clear definition of outcomes and systematic procedures and time schedules for the consideration of salient problems in the implementation of plans.

(2) Individualization of instruction through various approaches such as one-to-one relationships between teachers and students, tutorial sessions, and computer-assisted instruction.

(3) Allocation of funds around efforts at all maturational levels--preschool, elementary, and secondary (we shall discuss this recommendation more later).

A common conclusion--one which we too have reached--is that the most effective programs are the most structured programs (Bissell, 1970; Karnes et al., 1969d; DiLorenzo et al., 1969; McDill, McDill, and Sprehe, 1969; Miller and Dyer, 1970; Weikart, 1967,1969; Stearns, 1971). "Structure", however, is not easily defined in operational terms. At various times it has been used to mean one, several, or all of the five characteristics of successful programs abstracted by Hawkridge et al. in 1969. The most common definition refers to the "...extent of teacher direction of the children's activities", but this characteristic has typically been present when several of Hawkridge's features have been present. Stearns included several of them in her statement of important program features: "The more a program is well-formulated, well-organized, and focused on intellectual attainment and language skills, the greater are the changes in children's intelligence test performance" (1971, p. 26).

In general, all of these success-related characteristics seem to be operational statements of clear thinking about what one wants to accomplish and the best means to accomplish it, followed by consistent implementation of the strategies or means most useful in attaining the objectives. Perhaps we need to go even deeper--to the staff planning efforts and commitment which serve as a necessary base for consistent striving toward defined objectives.

Weikart (1972) is a key advocate of the notion that the staff model, entailing planning and supervision, is critical for the effective operation of a preschool. Comparing three programs, Weikart found a traditional curriculum to produce results comparable to those produced by a "cognitively-oriented" curriculum and a "language training" curriculum focusing on specific academic skills. Common elements of all three programs were:

(1) A clear rationale or set of principles which provided a framework for classroom operation and selection of activities congruent with objectives.

(2) Planning by two teachers for the week's lessons and daily review and revision.

(3) Supervision of each team of teachers by an experienced teacher who kept planning sessions focused on classroom activities.

(4) Involvement and commitment of the teachers and high expectations for child progress.

(5) Communication and respect among staff members.

(6) Home visits to involve the mother in her child's education.

(7) Weekly focus on the learning needs of each individual child for a period of time (necessitated by home visits).

(8) Heavy use of language by adults and encouragement of language skill development.

The particular elements critical to the programs' success have not been definitively established, but Weikart emphasizes the staff model. He feels that when he began to lose confidence in the effectiveness of the "unit-based" traditional program, its effectiveness began to decline: "...clearly, the results of the different programs reflect staff model, not curriculum model, effects." (Weikart, 1972, p. 53). The two essential elements for an effective preschool, according to Weikart, are (1) detailed planning for daily operation and (2) adequate supervision. What constitutes adequate supervision (which includes focusing efforts on central issues of the curriculum model and classroom implementation, serving as referee for staff problems, and providing inservice training) varies for different models:

> On the whole, the supervisor serves as the balance wheel in the operation of the curriculum model, maintaining through supportive services, dedication, and knowledge the momentum that the staff has generated. These functions are carried out to differing degrees in the several models. The Programmed curriculum needed the least amount of attention from the supervisor, little beyond the usual function of meeting with the teachers to insure adherence to the model.

> The teacher-proof scripted materials effectively limited the range of potential behaviors of the teachers and directed their energy. On the other hand, the Open Framework ("cognitively-oriented") staff needed and received considerable attention to integrate the theoretical base of their program with the classroom activities. The Child-centered ("traditional") program proved difficult to supervise. The program was based on the general knowledge of child development of the two staff members, and they were encouraged to design their own program, emphasizing those things they thought important. This freedom of the teachers limited the supervisor's role to general advise. The global and imprecise nature of the unit-based curriculum may be one reason why it was so hard to supervise." (Weikart, 1972, p. 55).

Planning and supervision, although difficult, can be systematically implemented. However, teacher motivation, respect among staff members, and high expectations for children are not so easily fostered, although it seems that the supervision could have a major impact on atmosphere and morale.

Our situation, in summary, is this: a cluster of variables, which generally are coincident, have been found to be characteristic of the most successful projects. Because these variables are typically found together, we do not know whether all, some particular subset, or some critical proportion of them are responsible for producing cognitive gains. The variables, however, are all related to the notions of structure and good management.

Age and length of attendance. Although there has been a general belief that the success of preschool projects would be increased if the age of intervention were lowered, there is little concrete support for the belief. The age (from two and one-half to six years) at which the young child attends an age-appropriate preschool does not appear to affect the amount of immediate change in cognitive performance as measured by IQ tests (Stearns, 1971; Weikart, 1967).

Also, in the absence of sustained intervention, no direct relationship has been found between the length of time spent in preschool and the size of IQ increments. Some projects have reported no higher IQ scores at school entrance after two years of preschool than after one year (Klaus and Gray, 1968; Beller, 1969). Weikart (1967) reported some IQ decreases during the second year of the Perry preschool project. Yet other projects have found substantial gains in the second year (Bereiter and Engelmann, 1968; Van de Riet et al., 1970). And Sprigle (personal communication, 1970) feels that one of his most important findings is that an earlier entry (age four instead of five) and therefore longer attendance results in larger IQ gain scores. Stearns suggests that the increase over time may reflect internal progression within the program, and that length of time spent with individual children may be a crucial variable.

There is some indication that an interaction may exist between child characteristics and length of time required for gains. Stearns cited a study by Herzog which found increases at different times during a 2-year project, with disadvantaged boys showing increases during the second year. A two-year preschool project at Howard University (Kittrell, 1968) produced gains at different times for children differentiated into three SES levels within the low SES stratum. The first year children in the high group showed twice the IQ gains demonstrated by children in the other two groups. The other children made approximately the same gains in two years that the "high group" made in one year (Fuschillo, 1968). These findings focus attention on the importance of considering different preschool effects on children with different characteristics and backgrounds.

Child program interactions. Interactions among child and program characteristics have rarely been studied systematically. More attention is now being directed toward them as it becomes more obvious that all children are not equally affected by preschool experience. The data now available are not consistent for all projects. For example, Miller et al. (1970) found that females in all programs consistently made greater IQ gains than males, while Herzog et al. (1971) found the opposite in their traditional project. Coffman and Dunlap (1967, 1968) suggest that boys benefit more from individualization of instruction than do girls. Bissell (1970) reanalyzed data from a number of studies and found that the most structured projects were of greatest benefit to children of the lowest SES; less structured projects were most effective with children of higher SES. We shall not elaborate further upon the types of interactions found to date as the data are not yet systematic nor numerous enough to support solid conclusions. But to maximize the effectiveness of projects, data on child-program interactions must be collected and used for further program planning.

Effectiveness of Preschool Projects: Family and Community

Attempts to determine the effects of classroom preschool projects on the families of participating children are few in number and are normally limited to interviews or questionnaires concerned with parental attitudes toward school. The lack of measurement techniques, our ignorance concerning familiar characteristics important to maximal development, and the primary focus on changes in children have contributed to the paucity of family assessment. When parental attitudes are reported, they are typically positive. Payment of parents as staff in preschool projects has obvious financial benefits, and involvement with young children may have beneficial side effects. Questionnaires and rating scales have shown changes in the attitudes of adults, but follow-ups have not been conducted. Given the sketchiness of the data, we cannot reach any well-founded conclusions.

Closely related to the effects of preschool projects on the family are the effects on the community served by a preschool. One major study of the impact of a large-scale preschool program, Head Start, has been conducted (Kirschner, (1970a). For all 58 communities studied, institutional changes occurred in the areas of education and health; few such changes occurred in control communities without Head Start. The changes made included the increased involvement of the poor at all levels in institutions, the increased employment of paraprofessionals, greater educational emphasis on the needs of the poor and minorities, and modification of health institutions to serve the poor more adequately. Although causality cannot be determined, the correlation between the presence of Head Start projects and institutional change is significant.

Evaluation Limitations

In every discussion of project impact, it is vital to remember that our objective assessment of program value is limited by the evaluation technology that is available and by our knowledge of where to look for efforts. McDill, McDill, and Sprehe (1969) emphasize that our knowledge of child development is too limited for us to know whether programs are effective. We simply do not know what variables are most important and we have no adequate assessment techniques for some variables we think may be important. Many reviewers have noted that evaluation measures should be consistent with the project goals (Cazden, 197[illegible]; Bussis and Chittenden, 1970; Datta (personal communication), Parker et al. (1970). Stodolsky (1971) has reported highly individual effects of preschool dependent upon what each child does with his time. Thus tests designed to measure attainment of the program's particular objectives would indicate how much the child has learned from his activities. Parker and Tombari (1972) underline the importance of criterion-referenced measures for formative evaluation during program operation as well as for summative evaluation.

IQ tests and achievement tests are relatively reliable and available. Most projects use them. Tests of socioemotional development are more primitive and are not readily available; therefore, projects either develop their own or provide subjective accounts of socioemotional changes. Furthermore, although "learning to learn" is a major goal of many of the cognitive enrichment projects, few projects have used measures of "cognitive process", that is, measures of the way in which problems are approached and solved or the way information is processed.

Exportability of Projects

The exportability of preschool models to sites other than the original experimental site is a critical issue. The level of implementation--the congruence between curriculum model and classroom behaviors emphasized at the original site and the export site--obviously has implications for the similarity of effects produced at the original and export site.

Several researchers (Erickson et al., 1969; Karnes et al., 1969d; Weikart, 1969) and Head Start (Miller et al., 1971) have exported preschool projects to other sites; Miller and his associates report on the basis of observational data that projects with different curriculum descriptions appear different in operation. However, we have no standard means for assessing the congruence between program implementation at original and export sites, and we have few data on the essential elements for successful, wide-spread implementation. McDill, McDill, and Sprehe pinpoint a possible, and probably common, pitfall in moving from a demonstration project to wide-scale implementation:

> ...the experiment which is the pilot project or demonstration of its originator can always be assured an extra amount of enthusiasm and hard work to achieve results. This effect, which we term that of the "charismatic innovator," will frequently disappear when the project is exported or disseminated to other less dedicated persons who have not been affected by the élan of the originator.
> (1969, p.45)

Written conceptual statements and written curricula at some level are essential for implementation of a program by others; however, these two guidelines are insufficient. Teacher training programs are crucial, and the development of teacher training programs for large numbers of teachers from wide-spread geographical areas is only recently being emphasized (Parker and Day, 1972).

The Future of Preschool Education

Since the existing preschool literature gives little indication of long-term success in eliminating the difference between IQ and achievement test scores of middle-class and disadvantaged children, what recommendations can be made concerning the future of preschool education? The scope of the answer can vary. A limited answer focuses on what type of preschool projects should be funded, assuming that they will continue to be funded. A broader one considers whether or not funding should be continued. We shall briefly review some answers of both types.

McDill, McDill, and Sprehe (1969) with their primary focus on evaluation, consider the types of preschool projects that should be funded. They are concerned with maximizing both project flexibility and knowledge of what is effecting changes. For the former purpose, high-risk projects embodying creativity and initiative are needed to quickly show whether or not something works. For the latter, carefully designed, controlled, and evaluated projects are needed to isolate critical variables. A continuum of project specificity, where an inverse relationship exists between amount of information obtained from evaluation research and creativity of the project, is described:

low	Minimum information from evaluation research	Maximum information from evaluation research	high
	Maximum possible creativity	Minimum possible creativity	

After their review of the literature, they make three recommendations:

> (1) First, as part of fund allocation and jurisdiction, a group of programs should be sponsored in which the method of evaluation is specified by committee. This would give the committee a group of control programs (a counterpart to control groups) which they could use to maximize the yield of statistical data of the type best suited to answer methodological questions.
>
> (2) Our second recommendation is that a small number of programs be funded at the other end of the continuum. programs which would be purely speculative and high-risk; i.e., in addition to the possibility of low pay-off, they should proceed without excessive and slow evaluation. The social urgency of compensatory education, we think, makes it in the public interest to find solutions quickly, which means funding novel, untried programs which do not have to be appraised immediately.
>
> (3) Third, the large majority of programs should fall into the category of compromise, or the middle of the contiuum, where any evaluation has to make do with what there is. Of course, the primary objective is moving programs from the left to the right side of the contiuum, where we can specify the conditions under which they will be successful.
> (McDill, McDill, and Sprehe, 1969, p. 69-70).

Several reviewers (Bereiter, 1972; Rohwer, 1971; Stearns, 1971) have concluded that preschool education alone cannot be expected to permanently accelerate the educational progress of children. Their reasons for removing the burden of academic success or failure from preschool education are somewhat different, however.

Rohwer (1971) is skeptical of any advantages resulting from preschool education for two main reasons: (1) learning and thinking processes in adulthood are different from such processes in childhood, and (2) the nature of the demands made by intellectual tasks in adulthood is discontinuous with the nature of childhood task demands. Given these differences, he reasons that preschool education could not be expected to have a major impact on cognition. Rohwer suggests that formal schooling prior to adolescence be radically changed so that the skills required in school are related to extra-school tasks (concurrently or in the future) and so that the child learns to enjoy intellectual activity. Furthermore, research should be focused on the period of adolescence to aid in producing techniques which will best promote the development of the skills emerging at that time.

Many educators have advocated continuity in educational programming from the preschool through the primary years (Sprigle; Caldwell, 1970; Bereiter, 1972). They maintain that cognitive gains are not maintained in elementary school because special programming is discontinued and curricula are not appropriate to the child's level of development and skill acquisition. One or two years of even intensive preschool cannot ensure sustained gains in later years unless the preschool experience is used as a foundation for later efforts. Several researchers (Miller et al., 1971; Karnes et al., 1969d; Erickson et al., 1969) have reported complex and unsystematic interactions between the type of preschool project and the following educational program attended by the child. Certain combinations tend to maintain, while others tend to wash out, short-term IQ and achievement increases.

Project Follow Through attempts to determine the effect of continuing special programs through the early primary grades. The critical question here centers on the necessity for preschool if later school programming is continuous and appropriate to the child's level of skills and development. If preschool is not sufficient without "improved" primary education, is it necessary with "improved" primary education? Both Erickson et al. (1969) and Miller and her colleagues (Miller and Dyer, 1970; Miller et al., 1971) suggest that an effective kindergarten instructional program can eliminate the differences between children who attended a "successful" preschool program and those who attended less effective or no preschool programs; however, if children go into less effective kindergartens, the differences effected by preschool programming remain apparent. Given these findings, Bereiter has adopted the following position:

> So long as it appears true that an effective kindergarten program will overcome differences in preschool experience, we must question the wisdom of concentrating compensatory education in the preschool period.
> (1972, p. 15-16)

Although Bereiter states that this strategy does not preclude a continued focus on developing more effective preschool curricula, he favors a different strategy: "What we need to do is not discover ways to teach them (young children) more but rather construct articulated educational programs that permit us to teach in the preschool what will be of later use and to teach later what builds upon what was learned in the preschool" (page 16).

Caldwell comes to a similar conclusion, although she approaches it from the other side:

> At times of peak excitement about certain ideas, it is easy to campaign for one approach and to seek diversion of funds from one endeavor to another. There seems to be no justification at this time for a strategy that would involve diversion of funds from education of older children into early education. Rather, increased allocations for programs for all ages are needed.
> (1970, p. 725)

Stearns (1971) conducted a masterful review of the preschool evaluation literature and concluded that "preschool attendance--even in centers with the most sophisticated knowledge, personnel and planning--does not make a difference in either achievement or measured intelligence in disadvantaged children by the end of the primary grades" (p. 144). It is the interpretation of these results, however, and not the results alone, that influences policy recommendations. Stearns offers three possible interpretations with associated policy alternatives:

> If the results mean that we have not enhanced the mental development of the children enough or that we have not really increased cognitive and emotional abilities which underlie intellectual achievement, then we might consider such things as:
>
> (1) not increasing large-scale preschool expenditures until we agree on what is important, find out if it is possible to bring it about, and discover the conditions under which it can be fostered on a large scale,
>
> (2) giving the children of certain parents special stimulation from birth or from age one or two years,
>
> (3) changing the goal of the program to day care with educational components to keep the children from regressing on the basis of what we now know, and forget the idea of accelerating development to insure children's chances to succeed after age five.
>
> If we get these results of preschool intervention because the school experience doesn't reinforce or, in fact, contravenes the preschool experience, then we might wish to:
>
> (1) change the goals, methods and/or content of public school programs,
>
> (2) make preschool programs more compatible with existing primary programs,
>
> (3) make both the preschool and primary programs plan a sequence of experiences under compatible philosophies.
>
> If we get these results because the home environment fails to reinforce or contravenes the preschool experience, we may wish to:
>
> (1) bring about more harmony of goals and methods between school and community,
>
> (2) remove the children from their homes for longer periods of time,
>
> (3) involve the entire community in an educational intervention (parenthood education) or other (e.g., economic, political) interventions which have effects on child rearing and schooling.
>
> (Ibid., pp. 145-146)

The problem is that present information does not help to choose among these three possible reasons for obtaining the results. Furthermore, "critical review" of the findings would not lead to optimism about our ability to change any one of these three factors (home, preschool, or school) sufficiently to guarantee 'normal' rates of achievement in young disadvantaged children, but there is some evidence that if it were feasible to change them simultaneously, chances of children's sustained success would increase" (ibid., p. 167).

Recognizing the limitations of the data, the complexity of decisions to maintain or expand new programs, and the multiple goals of programs, Stearns does not recommend formal preschool education for all children from age three or four, but neither does she recommend completely abandoning preschool efforts. Rather, she views preschool programs as "models for research and reform", as a means to develop techniques for improving existing institutions.

Rutter, Tizard, and Whitmore edited a book reporting a series of surveys conducted in 1964-1965 into the behavior, health, and education of school-age children (9-12 years) living on the Isle of Wight. The researchers involved attempted to provide a comprehensive description of "handicap" within this group of children, considering always the implications for service. In the process, they also reviewed related literature from their own and other countries. A rather lenghty quotation will be presented here because it concisely presents many of the conclusions previously discussed.

> The literature on the effects of nursery school attendance on scholastic progress is contradictory and inconclusive (Swift; 1964; Haywood, 1967). Nevertheless, it appears that while nursery school programmes have little effect on the educational progress of children of good intelligence from privileged homes, they have generally had a significant effect on the subsequent school achievement of socially disadvantaged children, of below average intelligence, if, and only if, the programme was directly focused on the specific defects (especially language deficiencies) of the children and if tutoring, instruction, or training was provided to remedy these defects (Haywood, 1967; Weikart, 1967). In primary schools, too, a structured approach is probably more effective with these children than a permissive programme (Haring and Phillips, 1962). Specialised preschool programmes for intellectually retarded children (Kirk, 1958) and for culturally deprived Negro children (Gray and Klaus, 1965, 1966; Eisenberg, 1967a; Klaus and Gray, 1968) have also been shown, in well controlled studies, to have beneficial effects. These studies have suggested that the preschool programme for the socially disadvantaged child is likely to be more effective the more the child's family can be involved in the extension and development of the child's learning experience.

> The gains have sometimes been quite small and even in the best programmes the children have only very partially caught up intellectually. A brief period of enrichment at four years of age is no more likely to be still effective at seven years than a good diet taken only at four years would protect a child from malnutrition at seven years (Eisenberg, 1967a). To be effective, the educational help must be continued.
>
> Although it is only too evident that much further research is needed into the question of preschool provision for children with different types of handicap, certain conclusions can be drawn. If the 'nursery' consists only of an adult 'minding' a number of children there will be no benefit. Free play and an opportunity to experiment are valuable but on their own they are of little use to socially disadvantaged (and probably to language or physically handicapped) children who have not yet learned how to profit from such opportunities. What is suitable for a child from a professional background is unlikely to be suitable for a child from an overcrowded slum. Nursery schools must make deliberate efforts to provide specific training which is appropriate in relation to the children's handicaps, whatever they are. Unless this is done the conventional nursery school is not likely to be of much help to the handicapped child.
>
> Yet again the plea for more provision must be linked with the need for experiment and evaluation. Preschool provision is required for handicapped children, but the ideas on how this should be organised and what should be provided need further testing.
> (1970, p. 367-368).

In summary, we can note several main trends which appear in suggestions for the future role of preschool education. First, support for the development of programs for all ages is stressed, with emphasis on assuring continuity of the programs for different ages. Second, many reviewers argue for continued, systematic research in preschool education. Future research should include (1) investigation of child-program and teacher-program interactions to ascertain the best way to meet the needs of each child, (2) observation studies to specify the processes actually occurring in the classroom, and (3) identification of the variables essential for a successful program. Third, there is a caution against the extreme positions adopted, both pro and con, when preschool education is considered as an immediate panacea for eliminating the manifestations of "disadvantage". Magical thinking, a term used by both Beilin (1972) and Bereiter (1972), is unwise, stimulating in its aftermath an overreaction to the inability of preschools to provide immediate, long-term improvement in the cognitive performance of disadvantaged children. A great expenditure of time, money, and talent has been devoted to preschool. Thus far a consistently effective, one-shot procedure for improving the life chances has not been found. Preschool projects have not been demonstrably effective in permanently increasing IQ and achievement.

Chapter 9: Day Care Projects

Day care first appeared in this country as an organized, publicly supported program during the Depression as a part of the WPA. Federally sponsored day care reappeared in 1941 under the Lanham Act in response to the need for women to participate in the war effort. In both of these cases day care centers were viewed as emergency measures to free mothers to work outside of their homes during a national crisis. And in each case, as the crisis eased, the federal money was withdrawn and the centers closed. We know of only one exception. The state of California to this day maintains some centers first opened in the 1940's. Its Children's Centers programs are operated by school districts and paid for by state funds and sliding scale parent fees.

Beginning again in the 1960's, some federal acts have provided for support of day care. The Economic Opportunity Act of 1964 funds day care for two programs: the Concentrated Employment program and the Migrant Children program. The Social Security Act as amended in 1967 pays for day care services under Title IV A for recipients of Aid for Dependent Children who are employed or in training, and for participants in the Work Incentive program. Title IV B provides some funding for child welfare services and for non-work-related day care.

More recently federal legislation has been enacted which allows a portion of the funds to be used for day care, but does not require it. Model cities, the Department of Labor and some Juvenile Delinquency Prevention and Control programs have such stipulations. Up to this point this day care option has been exercised at a very low level.

By reviewing the nature of these Acts it becomes apparent that day care has been supported by the public sector almost exclusively as a strategy for making welfare or near welfare mothers economically productive. Given this history of eligibility requirements (the mother must usually be in training or at work) and the modest level of subsidy for day care services,[9] we see that day care as a child-centered, developmental program is a very new concept.

For the purpose of this chapter we are concerned with the efficacy of day care not as a support for the mother, but as a child development strategy.

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[9] In Day Care Nightmare (1970) Patricia Cerald Bourne quotes center directors who testify that welfare payments in many cases do not meet the cost of day care services. This is a disincentive for center directors to serve children of the poor.

The federal government has not invested in developmental day care efforts beyond the research and demonstration level. Whether such programs should receive widespread federal backing is clearly an issue of current public debate. Consequently we feel it is important to include the following analysis of possible benefits for children in a variety of types of day care programs.

While the federal definition of day care includes children from zero to 14 years, we have limited the scope of this discussion primarily to the effects on infants and toddlers (zero to three years). It is for this youngest group that day care opens up new possibilities of early stimulation. It is for this youngest group that there is concern about the possible negative effects of separation from the mother or exposure to infection. This concern dates back to Bowlby's (1951) classic review of effects of early environmental deprivation or institutionalization on children. His findings were interpreted to suggest that the absence of an attachment to a mother figure and of sufficient stimulation may result in lasting mental or emotional pathology.

For older children, however, day care is simply a rearrangement of components which have already been tested over several decades in various preschool and public school settings, without reports of any common deleterious effects. However, a recent review of the attachment relevant literature from institutionalization studies and laboratory "strange situation" research points out that there is no evidence to support the harmful effects of day care on attachment in young children. The preschool data are reviewed in Chapter 8; there are as yet no data on the developmental effects of after school day care.

Surveys indicate that most parents prefer that zero to three year old children be cared for in their own homes by their own mothers (Massachusetts Early Education Project Survey, 1971). This type of child care can be subsidized by the government by paying the mother for her services. (This is the principle under which AFDC was initiated.) We will not consider this arrangement here since it is more appropriately classified as a family intervention. Day care, therefore, will be defined here as including all full day child care except home care by the child's parent.

Day care is a service which can be either paid for or bartered. When parents exchange day care, the arrangements are usually informal and there are practically no data on outcomes. The few evaluations have been expressed in terms of parent satisfaction only (Emlen, 1970). The results of such studies are very difficult to evaluate. Working parents' reliance upon their current day care arrangement may affect their judgement of quality, especially if their choice of services is limited. The heavy value-loading of such a question also makes it unlikely that parents feel free to give an unbiased response and thereby to risk labelling themselves "bad parents".

This same problem exists in many day care arrangements that involve financial transactions. Only for recent, more elaborate group care demonstration projects has data been systematically collected and analyzed. And even for these programs the evaluation designs are weak: the sample populations are very small, the controls are imperfect and there is little longitudinal data. As we have shown, day care has not customarily been treated as a child centered intervention. Until these demonstration projects were created in the last few years, inquiries had been limited to possible negative effects.

A second severe difficulty in assessing the benefits of day care is the lack of reliable and valid measures. Even though a few demonstration centers administer tests on a regular basis, their practical value for the policy maker is questionable. The measurements are almost exclusively in the cognitive domain, using instruments that are known to be highly unreliable with children under four years of age. Nevertheless we will make an attempt to glean some information out of the studies. Our focus is exclusively on data gathered in the United States and Canada.[10]

In order to make use of what information is available, it is necessary to develop a system for categorizing (1) all possible outcomes of day care (e.g., increased rate in infection or cognitive gains); (2) the different environments for implementation (e.g., a home with four children of mixed ages or a center of 150 children separated into groups of ten age peers); (3) the intended benefits or purpose of each particular arrangement (e.g., development of positive self concept or cognitive gains).

This strategy produces a three dimensional matrix. While all the cells can be described, there are data to fill only a few. In the following pages we will describe all possible benefits and identify the domain of those which are measurable (page 132), discuss the various environments for day care (page 136), and classify by purpose existing programs which do provide useful data (page 142). Finally we will report the basis on which costing estimates are generated, and the results from three recent national studies (page 167).

Since there are so few programs which go beyond describing their philosophies and techniques to record measurements, the conclusions following the presentation of results are necessarily tentative.

Throughout the years of World War II and continuing into the 1950's, day care services were used extensively in New York City and in other metropolitan centers. There is no evidence of widespread damage to children. While there may have been slight effects, the results have not discouraged the use of day care.

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[10] We had hoped to include a review of the European experience with day care, but found the literature too general and the data too incomplete to contribute substantially to our cost/benefit analysis.

Even the new data coming out of the day care demonstration centers reinforce the conclusion that there are neither widespread deleterious effects nor few dramatic benefits resulting from approved day care programs. The effects typically fall into a more neutral category.

Once this ground work has been laid, the specified benefits of existing programs may suggest other combinations of program components to achieve effects in one of the domains for which we now have no data.

Identification of the Domain of Measurable Benefits

We will separate the potential effects of day care into three primary categories: physical health, social-emotional development, and cognitive development. Even though these categories can be argued to share equal importance in the development of a healthy child, they must be unequally represented in the measurable outcomes since there are fewer data for day care on physical health than on cognition, and no generally respected means of evaluating development in the emotional realm.

Physical Health

Within the domain of physical health, three classes of outcomes should be considered: infection, nutrition, and motor development.

Infection. The types and frequency of infections which might be communicated from one child to another in group care are of concern both to parents and professionals. If, for example, there were significantly higher rates of morbidity in group care child care than in individual homes, it might be concluded that especially the very young, who are highly susceptible to a variety of infections (e.g., respiratory and gastro-intestinal), should not be so exposed. Or at least there should be tight controls on cleanliness and isolation rooms for children showing any symptoms of illness.

On the other hand, if the exposure of the group to a child with an infection could be reasonably well controlled, a center with a staff or consulting physician or nurse might be better equipped than the average mother to recognize symptoms early and to provide preventive care, thus improving the overall health of the child.

Nutrition. In full day care children must receive a good portion of their nutrients from the caregiver. Since nutrition is so vital to a child's development it must be carefully regulated. While this aspect of day care should receive careful attention in costing programs, we have no data on outcomes.

Motor development. Motor development is also affected by day care since young children spend most of their waking-playing hours in that setting. There are narrative accounts of the amount and type of play space, types of activities and toys considered necessary or optimal, but few data other than several recordings of Bayley Motor Scales scores have been recorded.

Social-Emotional Development

Evaluation in this area is insufficiently developed to be reliably categorized and analyzed statistically. A variety of specific methods have been generated.[11] Two general types of observation are most commonly employed. Some researchers observe children and adults interacting and create categories and rating systems to reflect what they see. Others formulate a hypothesis and observe interactions which either confirm or deviate from the anticipated outcome.

In day care settings there have been studies which rate the actions of the children and some which focus on the behavior of the adults in a particular setting. Several studies of this type will be referred to in the discussion of the significance of day care center size.

Cognitive Development

Cognitive development in a day care setting can be assessed by: (1) standardized, broad-gauge testing procedures that assign the child to some percentile level among a norming group of his own age; (2) infant testing procedures based on Piaget's procedures that assign the child to a stage level in Piaget's sequence of cognitive development; (3) various tests of sensory, motor, memory, or psychophysiological function which compare experimental and control subjects; or (4) behavioral observations that assess some aspect of the day care child's exploratory behavior, attention span, use of toys, etc., against comparable behavior for a non-day care child.

In all such cases, we may unequivocally establish that day care is associated with some difference in cognitive function in the child, and there is generally enough theoretical understanding behind the comparison so that we can then assign some positive or negative value to the difference. To say this another way, we can usually establish incontestably that day care has made some difference in the child's cognitive function, and we will usually have relatively little argument about whether the child is better off or worse off because of the difference. But existing theory or data are not sufficient to say whether an observed short-run difference will make much of a difference in the long run.

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[11] For example, the Vineland Social Maturity Scales used by Keister and the imitation behavior indicators developed by Daniel M. Ogilvie.

Beginning at age two, we can give children a Stanford-Binet test and thus obtain an index of the child ostensibly comparable with later indices. But the correlation between the Stanford-Binet at age two and age twelve is about .30. Possibly, some other set of items at age two might constitute a better long-run predictor of later IQ. Growth factors associated with early cognitive development may be idiosyncratic for children, so that a given child may drastically shift his relative standing among a group of children, through normal growth on his schedule. The possibilities for an intrinsic instability of status seems quite real. Height at age two, for example, predicts later height much less well than height at age six.

The small group of day care studies now available have registered some positive cognitive effects of day care and, undoubtedly, with further studies we will be able to establish further cognitive effects. The practical or lasting consequences of induced cognitive gains in day care will probably only be clearly interpretable through longitudinal or follow-up studies that track the gains into later life.

Day Care Delivery Systems: the Environment

Possibilities in delivery of day care have been represented nicely in a taxonomy prepared by Parker et al. (1971). Parker's taxonomy is sensitive to issues of environmental factors and sponsorship (Table 11, page 172). Since variations in sponsorship (apart from variations in staff-child ratio, etc.) have little direct effect on the child, this section is limited to environmental variables.

Day care environments vary in three ways that might affect the child's reaction to day care: in setting, in nature of caregiving relationships, and in the number and age range of the other children present.

The Federal Interagency Requirements discuss three settings: family day care homes, group day care homes and day care centers. That breakdown will be expanded here to include distinctions between types and size of centers. Federal Interagency Requirements have not been set for center care of children under three years of age. And no center can legally offer care for children under three unless the particular state has specific licensing requirements for this group and the center meets those standards. A new set of Federal Standards has been proposed, which, if adopted will change these official categories somewhat. (See Appendices IIB & IIC.)

Family day care home. The caregiver may or may not be the mother of some of these children. Most of day care still does not take place in licensed homes or centers (OEO Impact Study of Day Care, 1971.) That which is licensed can be described by the limits of the Federal Standards (See Appendices II B & IIC).

Group day care home. This is usually an extended or modified family home divided into residential space and a portion reserved for day care activities. One or more employees work with the principal caregiver. The limit is 12 children who may vary in age from three to 14. Children under the age of three are not to be included in this arrangement according to the Interagency requirements. These homes are generally neighborhood based. Again the child to adult ratio may never exceed six to one, or five to one if the children are preschoolers.

Center care. Day care centers are the alternatives to the several types of home care. On the basis of a discussion by Elizabeth Prescott (1970) on observed effects of size, we have separated centers into three types: small, family-like centers (12-30 children), middle sized facilities in churches or similar non-family settings (20-60), and large, institutional centers (60-200).

While infrequently mentioned in project reports, the size of the day care center is a matter of concern in comparative research. Elizabeth Prescott studied a random sample of 50 centers and found the following consequences of large centers:

1) Freedom and flexibility were severely restricted since schedules had to be fixed to accomodate many groups of children using the same kitchen, outside play area, bathrooms, etc. This interfered with children's individual needs. Larger centers tended to have better trained teachers and an absence of crowding, usually predictors of teacher sensitivity, but not in this case.
2) There was significantly more emphasis on rules and routine guidance and the teachers' responses were rated "neutral" or "distant" far more often than "sensitive". The responsiveness and involvement of the children rated low as well. They were seldom observed to be highly interested or enthusiastic.

3) Most large centers rated low on organization and on variety of activities available for choice. Generally children were grouped with their age peers and had little opportunity for cross age contact.

Similar findings were reported by an ABT Associates report in 1971. ABT argues that the program director is the most critical staff member in determining the quality of the environment, however:

> "It also appears that directors' skills cannot readily be spread over a large number of children. As the number of children in the center increased, a drop in 'warmth' was observed." (ABT Associates, Inc., 1971)

We have no documentation of damage to children having resulted from exposure to these larger day care systems. We present these findings of Prescott and ABT as the basis for choice of preferred center size.

It follows then, that in home care as well as in the smaller center, flexibility and variety in scheduling to meet individual children's needs are positive attributes. The child can eat, sleep, use the toilet, bathe, and play without being regulated by a schedule formulated to accomodate many others with similar needs. In addition, he can participate in the preparation of meals and other activities that might not be accessible to him in a center.

The Caregiver

While seemingly influenced by the setting (Prescott, 1970) the caregiving relationship can also be an independent variable. In either a home or a center a child might be cared for by one constant mother supplement or receive differential attention from two or more adults responsible for his care. Especially with infants there is feeling that a more constant and personal relationship is superior to "multiple mothering", if the one caregiver has the personal qualities to adequately stimulate and comfort her charge.

There seems to be no correlation between formal educational credentials and quality care (ABT Associates, Inc., 1971). Choice of personali
in-service training may be the more crucial considerati

Numbers and Age Range

The number, age range, and grouping of other children being cared for are important environmental factors. This fixes the overall adult to child ratio, the constancy of the adult to child relationship, and the potential for younger children to learn from the behavior modeled by the older ones.

With the same number of staff some directors prefer to create isolated groups of children cared for by one adult each (Keister, 1970), larger groups with two adults (typical in many custodial centers), or an open classroom style where an even larger group of children and a number of staff may flow between several rooms (Fowler, 1971).

Many home play groups and day care centers group children with their peers but others purposely do not (Lally, 1970).

The environment, then, provides numerous variables which can be combined in alternative ways. The sample programs in the following section demonstrate the effects of a few of the possible options. Many combinations of environmental factors and program types have yet to be implemented and analyzed.

Classification of Program Types and Projects by Intended Outcomes

Types of Day Care Programs

Below is a description of possible types of day care programs defined by their intended outcomes. Following the rationale for the formation of the three categories (custodial care, enrichment programs and programs designed to maximize some specific aspect of development), specific projects will be reviewed.

Custodial day care. This category includes all homes and centers which state their objectives primarily in terms of service to the mother and family rather than in benefits for the child. The only explicit benefit to the child is the maintenance of physical well-being.

The organization of such projects can vary considerably even within the bounds of the standards defined by the Federal Interagency Requirements and by the state licensing laws. These laws specify the minimum staff to child ratio for each age group and the allowed number of children per day care group. For instance, with three to four year olds the ratio must not drop below one to five and no more than 15 children may be cared for in the same group. (Complete requirements in Appendix II B.) Partly because of the elaborate standards and guidelines, most day care is not licensed; consequently there are no records of the effects of these arrangements on the participating children.

Enrichment day care. This general type has a second goal in addition to maintenance of physical well-being. Such projects claim to be working with children to stimulate social and emotional growth. Common references are made to the development of positive self-concept, self-reliance and the ability to form successful relationships with peers and adults.

Exercises in the cognitive realm may be included to vary the daily routine, but the provision of such exercises is generally not an issue of primary importance. Many programs include some social services for the parents. If these include parent training in infant stimulation, it becomes difficult to differentiate day care benefits from the home effects of parent training.

One distinguishing feature of this type of program as compared with the custodial type is an increased adult to child ratio to provide more individual attention for each child.

Among the reviews following are two programs of this nature which have recorded measurements of the cognitive and physical development of their children.

Programs in day care settings designed to maximize a particular aspect of development. While programs of this type currently in operation focus on cognitive development, there are other conceivable possibilities (e.g., projects directed at motor development). The defining feature includes a specified series of exercises uniformly implemented by trained personnel and a very favorable staff to child ratio.

Parent training tends to be an integral part of such programs so that measured benefits reflect the combined effects of center and home stimulation.

Since child development theory has not achieved a high degree of sophistication, these goal oriented programs are necessarily research projects as well. Even though they provide data, the results are inconclusive, at most suggesting trends yet to be substantiated.

Program Descriptions and Review of Evaluation Data

The following specific cases were chosen for review: (1) to illustrate some combinations of those elements of day care described and categorized above, and (2) because they are the only programs which have produced reports with seemingly reliable data in addition to description.[12] The reviews are organized in increasing order of program specificity. In each case the known environmental factors are described as are the intended benefits of the program. Finally, the statistically significant outcomes are reported and possible trends noted.

The first review focuses on a study of two programs in which the researcher had no management responsibility. In all of the rest the research team was under the direction of the project manager.

Organizational factors and educational outcome: a comparison of two types of preschool programs. Ellen Handler at the University of Illinois provides some of the only longitudinal data in her comparative study of school achievement of second graders from three pre-school settings: subsidized full day custodial center care (Group I), Head Start (Group II), and at home with mother although eligible for subsidized day care (Group III).

The environment of the day care centers is not described but intended outcomes are expressed as "little more than baby sitting".

Background information on the sex, age, birthplace, family structure and occupational status of the father showed no significant differences among the groups. However, the Head Start children were more likely to have a large number of siblings and the day care children more often had working mothers.

12.There are several other projects which are accumulating data (i.e., Frank Porter Graham Center in Chapel Hill and Yale Child Study Center in New Haven), but their statistical analyses are not complete enough to be useful in this chapter.

Handler used three types of indicators of school success: (1) percentage of normal promotion, (2) Caldwell Preschool Inventory at the kindergarten level, and Cooperative Primary Listening Test at the first grade, and (3) teachers' comments concerning behavior problems. She has no baseline data; she gathered all of her material when the children were in the second grade.

In Group I (n=12) 67% of the children were promoted normally both years. In Groups II (n=37) and III (n=13) only 46% were promoted both years.

The achievement test scores follow the same pattern as above although the results are not so dramatic. Group I showed consistently higher scores than Groups II and III although the differences were statistically significant on only one subtest of the Caldwell Preschool Inventory. The differences between Group II and Group III scores were minor and inconsistent.

In terms of teacher's negative comments regarding problems related to social, motivational and interactional skills, Group I did significantly better than Group II and differences between Group II and controls were not statistically significant.

As a result of her findings Handler presents a two-part hypothesis: (1) that the positive school achievement trend of the day care children is a function of the more extensive socialization experience compared to the half-day Head Start program which holds no summer classes even though the goals of the latter are primarily educational, and (2) that for the day care group, the process is less apt to be affected by parental counter-pressures since most of the child's waking hours (including summers) are spent in the day care center.

We regard these findings to be highly tentative since the sample is so small and there are no baseline data. However, Handler has succeeded in identifying an intriguing area for further study.

A demonstration project in group care of infants and toddlers, Greensboro, North Carolina; Director, Mary Keister. This project is housed in a new education wing of a church near a university campus. It is a middle-sized center; for the 1969-70 year there were 31 children enrolled. The staff maintained a ratio of one adult for every five children under 18 months, for every six two year olds and for every ten three year olds. Many times these ratios were altered by the additional presence of the director, nurse or student assistants. The center was open ten hours a day with each child attending an average of six to nine hours.

While they had no hard data to substantiate their preference, Mary Keister and her colleagues favored an arrangement of five or six children in a room with one adult over the option of ten or twelve children in the same space with two adults. In addition to keeping the groups small and the caregiving relation constant, provision was made daily for each child to play by himself, undisturbed by the rest of the group.

The staff chose two models as a basis for planning the daily program: the good middle-class home and the good nursery school. The project falls in the enrichment category. In practice, they hoped their arrangements would lead to:

1) careful planning with the parents for a baby's transition from home to the Nursery and back home at the end of the day

2) continuity in care of each baby; one "in-charge" caregiving person who knows well the baby and his requirements

3) care of planned consistency

4) pride, pleasure, and enjoyment on the part of the staff in each child's special qualities, developing skills, readiness for new experience

5) feelings of "belonging together""--caregivers and babies and babies with their age-mates

6) individual attention, cuddling, "talking to" at feeding time, diapering time, play time

7) toilet trainings undertaken by the child's favorite caregiver, whan staff and parents agree the child is ready

8) meticulous concern for health care and protection/prevention

9) provision of a Sick Bay at the Nursery to permit children with minor illnesses to attend regularly

10) a play environment that "turns children on"--well-equipped, orderly, protected, challenging, age-appropriate

11) parents as partners in planning and as the important and responsible figures in the baby's life (Keister, 1970, p. 24).

The purpose of the evaluative part of the project was to demonstrate whether or not there were deleterious effects of group care of infants. Each child in the sample was matched with a control in home care and tested for physical development, physical health, mental development (Bayley Scales and/or Binet), motor development (Bayley Infant Scales) and social development (Vineland Social Maturity Scale and the Preschool Attainment Score, PAR).

The consulting pediatrician had prepared the staff for high incidence of diaper rash, skin infections, gastro-intestinal or upper respiratory infections. Despite difficulties in collecting data they did keep records which show that center babies had significantly more illness than did the controls. The major differences were frequency of diaper rash and respiratory illness.

Height and weight measures were not analyzed statistically but, if there was a trend, the controls were slightly shorter and heavier.

Initially the controls scored higher on all cognitive measures except for the PAR but all the differences were non-significant. At the final testing the Center children had higher scores on all measures, and the Bayley Mental and the PAR were significant. The mean slope indicated that the rate of development was slightly faster for the Center children.

This project is impressive in several respects. It is the only one in which such a diversity of data has been collected; it provides the only records of frequency and type of infection. Although the staff does not boast an intensive effort to affect cognition, by the final testing the group care babies did score higher on all cognitive scales even though the differences are not sufficient to argue the superiority of Center over home care.

Center for Early Development and Education, Little Rock, Arkansas; Director, Bettye Caldwell. The Center for Early Development and Education is structured in three divisions: the Preparatory Division, the Transition Program and the Elementary Division. The Preparatory Division is for the children under six years of age and is divided into four groups. Children aged six months to almost three years (the youngest) are in a building specially designed to resemble a natural home setting. A staff ratio of one to four is maintained by the presence of one certified teacher, a co-teacher and two child-care aides. The constancy of the adult-child relationships is not clear since the design of the sub-divisions of the groups are not reported.

TABLE 9.1

Means, Standard Deviations, and Fs

for Mental, Motor, and Social Score Differences*

		Mental	Motor	Vineland	PAR
Initial Difference	Mean	1.27	0.53	0.20	-1.27
	S.D.	1.76	0.95	0.78	0.90
	F	0.52	0.31	0.06	1.98
	p	0.51	0.59	0.80	0.18
Final Difference	Mean	-3.67	-1.60	-0.47	-2.30
	S.D.	1.42	1.14	0.93	1.05
	F	6.70	1.98	0.25	4.79
	p	0.02	0.18	0.63	0.04
Mean Difference	Mean	-0.92	-0.97	-0.32	-1.71
	S.D.	1.11	0.83	0.66	0.92
	F	0.68	1.35	0.24	3.49
	p	0.57	0.26	0.64	0.07
Slope Difference	Mean	-0.48	-0.16	-0.32	-1.71
	S.D.	0.20	0.17	0.16	0.13
	F	5.61	0.81	1.51	2.15
	p	0.03	0.61	0.24	0.16
Multivariate	F	1.61	1.51	1.14	1.35
	p	0.24	0.27	0.39	0.31

* Difference Scores were computed by subtracting the Center child's score from that of his matched Home control. Negative means indicate a superior score for the Center child.

Taken from Keister, 1970, p. 45.

The program was fashioned after the Kramer model described below, and falls in the enrichment category.

The Kramer Model

> The model which has guided the development of the educational program is one which views the school as one of the significant environments in which the child's development will occur and in which a great number of significant encounters with people, objects, ideas, and events will be centered. The goal for the school is to become a supportive environment which, in collaboration with the home, the neighborhood, and the larger community, will facilitate the child's development. Our educational format is built upon a few simple assumptions:
>
> 1. Education must begin at birth or as soon thereafter as possible. The first few years of life comprise a sensitive if not a critical period for the learning of language and for the establishment of motivational "contracts" with the future.
>
> 2. "Education" and "school" are not synonymous terms, and much of the significant learning that occurs during a child's formative years will not occur inside the school. The learning which the school tries to influence must take cognizance of and be consonant with the learning that occurs outside the school.
>
> 3. There is no effective functional separation of educational activities either into processes (social, emotional, cognitive, etc.) or into subjects. All behavioral development involves the total organism, and all socializing (educating) operations influence the child in all areas. One of the most underdeveloped aspects of most educational operations is explication of the ways in which supposedly circumscribed teaching activities designed to influence behavior in the cognitive domain produce fallout in the socio-affective domain.
>
> 4. A careful articulation of specific educational objectives is essential for the conduct of any educational program. These should be articulated at varying levels of specificity ("the child should love his fellow man"; "the child should be able to state his first and last name distinctly") but always anchored in terms of some sort of objective behavioral assessment. Through careful analysis of time in achieving such objectives, more can be learned about the sequencing of activities associated with learning with minimal cost and effort to either the child or the teacher.

5. In formulating educational objectives and in devising teaching activities to achieve them, the educational environment is shaping the behavior of the child. No cliche about individual freedom should permit us to escape that realization. To avoid the responsibility for shaping behavior does not permit us to shun the burden, for "doing nothing" to help development is as definite a pattern of influence as doing all one can. The obligation of the socializing agent to the child is to shape behavior likely to be adaptive in a wide variety of potential future environments and to develop skills and attitudes which leave options open as long as possible. For example, the child who does not learn to speak the language of his culture has most choice options frozen for him at an early age; the child who never learns to read is restricted from countless choices which he might at a later age wish to make. Therefore, the obligation is to keep open the options for choice.

6. There is no one pedagogy which will help all children achieve the objectives of any educational program. A truly supportive educational environment is one which allows for individual differences in learning styles and interests.

7. Childr [illegible] n best in an atmosphere conducive to the developme [illegible] lings of self-worth. Such feelings will develop i [illegible] osphere which respects individual differences in children [illegible] families and in which discipline does not involve derogation or threat of loss of respect.

8. A major task for those who shape the learning environment is to carry on a continuing, sensitive assessment of the child's achievements and his rate of increment and arrange learning tasks that correctly solve the "problem of the match" discussed by Hunt (1964) and Montessori (1912).

9. At all levels of their development, children need continuing contact with adults. The learning environment which we have attempted to create is one which, to paraphrase Bronfenbrenner (White House Conference Statement), brings adults into the lives of children and children into the lives of adults.

Such principles can sound ponderous and artificial rather than vital and meaningful. What we are trying to do, however, is to create a program which is very much alive and very much a salutary force in the lives of the young children in their school and out. We want them to be happy, to hate to miss

> a day at school, maybe to run to school in the morning because they can't wait to get there. We want to be their friends and want them and their parents to be ours. And we want to manipulate educational technology every way we can in order to help them develop optimally and to remain committed to life. That is the heart of our educational model. (Caldwell, 1970, pp. 8-10.)

These principles are similar to those of many day care centers. They are not specific enough to be tested. The primary focus is on emotional needs, early language, socialization and physical coordination. No tests are administered to this youngest group but some sequential development tasks are planned in advance and initiated daily. The project report does not enumerate them. Developmental measurements of children three years and older are recorded in the Preschool section of this chapter.

Bettye Caldwell implemented the Arkansas program after she left Syracuse. Her second effort was more expansive in numbers and age range, but the research does not focus on measuring the development of the infants and toddlers. No child under three years of age is tested and the project is too new to provide longitudinal data. Since in the Children's Center the infants and toddlers have been tested, and the discussion of program can be related to results, this review follows that of Arkansas in our schema of reporting in increasing order of specialization of effects on the zero to three year old population even though the reviews are chronologically reversed.

The Children's Center, Syracuse, New York; Past Director, Bettye Caldwell, Present Director, J. Ronald Lally. This day care center has been in existence since 1964. In 1968 when the directorship changed hands from Bettye Caldwell to Ronald Lally, the program was altered significantly. This resume will be divided into two corresponding sections.

1) 1964-68. The Center makes use of the education building of a a church containing eight classrooms, a gymasium, a kitchen and dining area and office space. Outdoor play space is limited.

The children were divided into age-peer groupings; for children under three a staff ratio of not less than one to four was maintained during waking hours. In the interest of maintaining constancy in the care giving relationship the program opened with teachers working full days. Since then, they have altered this practice to include part time teachers since the toddlers are such an exhausting responsibility.

The purpose of the program as stated in the original proposal submitted to the Children's Bureau is as follows:

> The basic hypothesis to be tested by this demonstration unit is that an appropriate environment can be created which can offset any developmental detriment with maternal separation and possibly add a degree of environmental enrichment frequently not available in families of limited social, economic and cultural resources.

In practice the day care program has two components, health and education. The health program was designed to affect both the children and their families. Each child is checked by the head teacher as he comes in. If there is anything unusual about his behavior or appearance the principal arranges for a nurse and, if need be, for the pediatrician to see the child. A public health nurse makes home visits.

The education program is in the enrichment category and is implemented with even the youngest (6 months) babies.

There is a great deal of deliberate stimulation as well as opportunities for the child to initiate activities and interactions. The teachers are trained to use their attention as a powerful reinforcer (e.g., approving remarks, smiles, pats).

The table on the following page illustrates the Cattell and Binet quotients determined at six month intervals on children who had been in the program approximately one year.

The sample is too small to substantiate the trends as being predictive, but this testing shows that the control group scores drop over time whereas the experimental group scores increase.

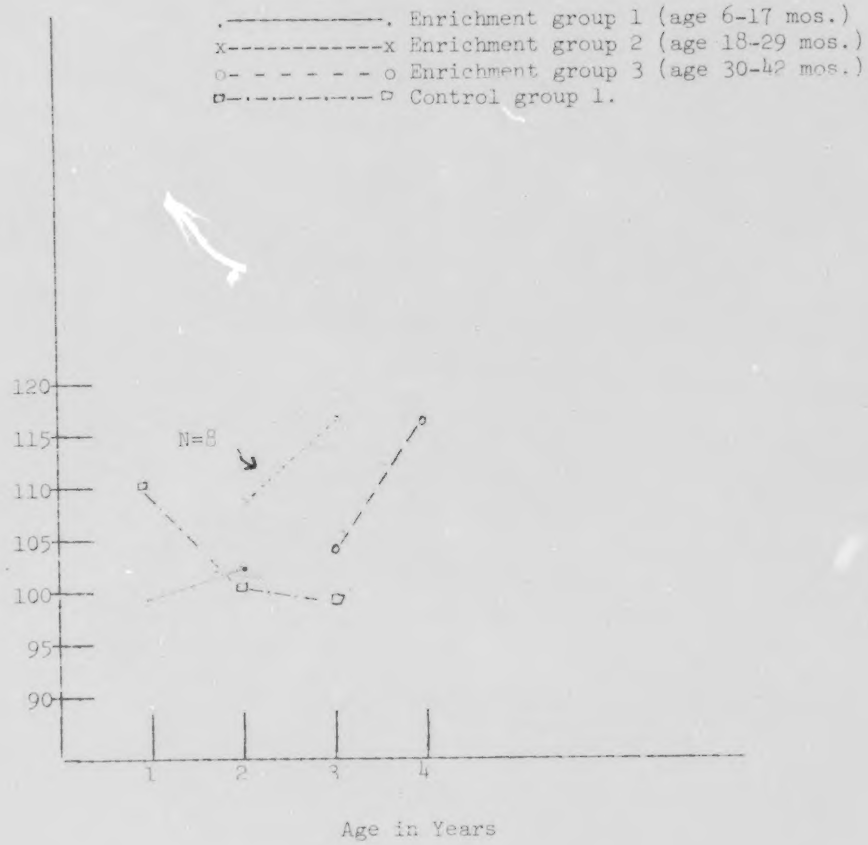
Tannenbaum (1969) wrote a supplementary progress report comparing the cognitive gains of middle versus lower class children. By 1968, 24 IQ points separated the groups. the middle class children having gained more rapidly. (See Table 9.3)

After analyzing stimulation provided at home, he concluded that this was a better predictor of progress than socioeconomic class per se. Higher home stimulation scores associated with higher positive IQ change scores. His interpretation is that adequate home stimulation increases the child's ability to benefit from extra stimulation provided at the Center.

2) 1968-present. In 1968, Ronald Lally instituted a major program change. Twenty seven children ranging from 18-48 months of age are cared for in a "family style" program. Four rooms and a hallway, a gymnasium, playground and cafeteria are available for their use.

TABLE 9.2

Mean Quotients Earned by Three Groups of Children Participating in an Enrichment Program and One Control Group on Consecutive Yearly Evaluations*



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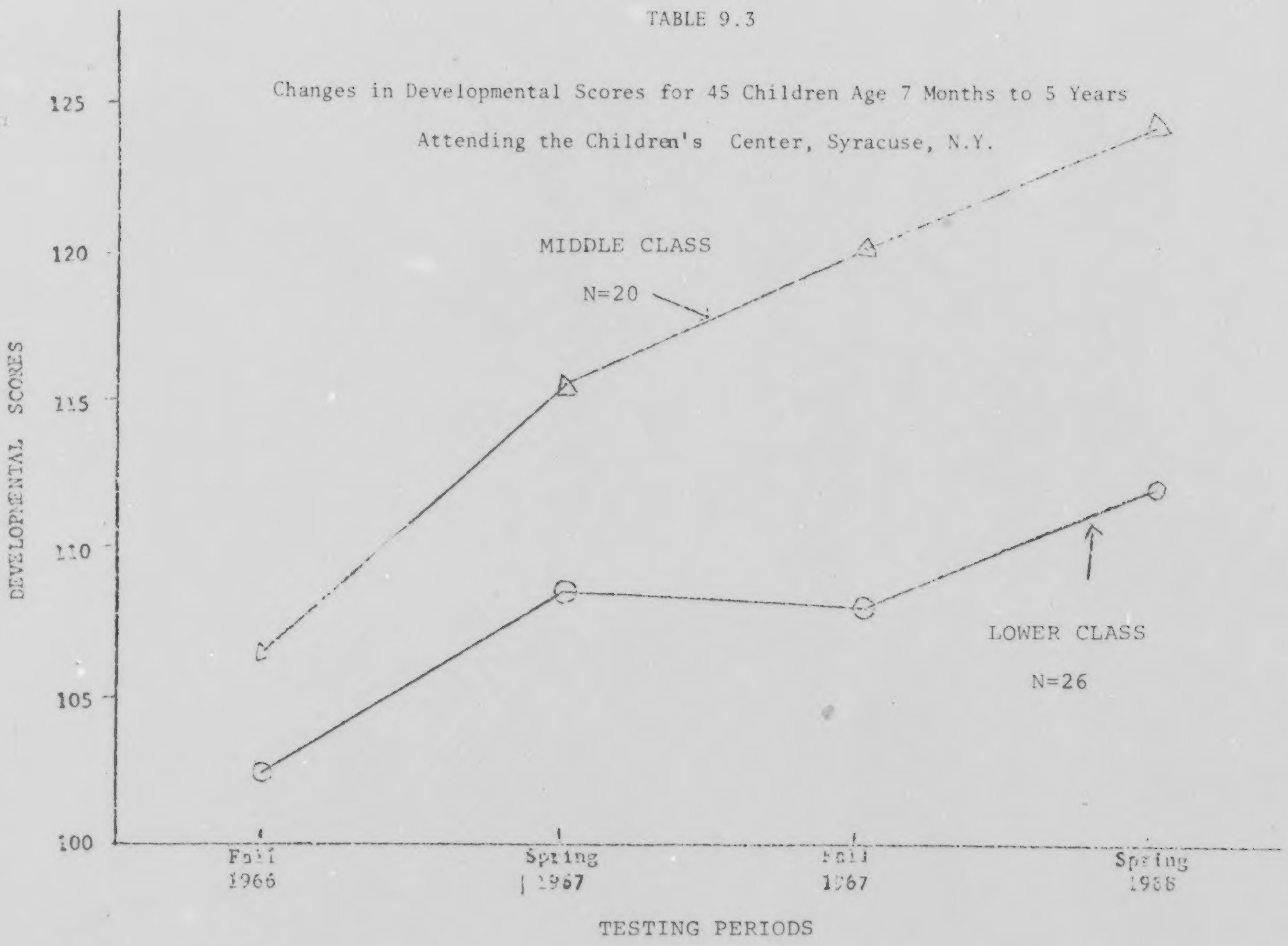
* Caldwell & Richmond in L. Dittman, 1968, p. 353. Table 3.

TABLE 9.3

Changes in Developmental Scores for 45 Children Age 7 Months to 5 Years

Attending the Children's Center, Syracuse, N.Y.



Taken from Tannenbaum, 1969

Each of the four rooms has a designated purpose (Table 9.4) and all of the children are free to move from room to room. Within each room specific types of activities and one or more teachers are always available. The one to four staff ratio is maintained and teachers are more able to work with individual children and to encourage the older children to serve as models and teachers for the younger ones.

The program has changed in style but not in purpose; it is still in the enrichment class.

The positive views of the change are summarized by Lally and his staff as follows:

> The advantages of the program are many. We saw immediately the advantage of the multi-age grouping. Older children took the little ones under their wings from the start. They have been especially protective and helpful, and this is helping them feel important and needed. The little ones had perfect models to imitate; it seems several of the almost-two-year olds started talking almost overnight and showed interest in toilet training before the teacher even made any suggestions. This could be due to readiness, home factors, or something else, but we like to think the association with older children helped. Behavior of the older children at the lunch table is definitely mirrored in the little ones. Also, because of the wide age range, we had to have a wide variety of materials and activities with several levels of difficulty to meet the needs of all the children. This permits the child to try a piece of equipment that one might not ordinarily have programmed for a child of that age. What the teacher judges to be too easy or difficult, might be just what that child wants and needs. Conversely, a child is free to go to a puzzle or game he may have mastered a year ago and get a good feeling in redoing the task. Additionally, he may try a task that is beyond him and his need for aid will propel him to seek the help of an older child...The most striking thing about the (new) program is that the children always seem to be so happy. It is not that they were unhappy before, but now it seems the combination of freedom with many opportunities to enter into a variety of experiences with other children of various ages, a teacher, or by oneself has really set an enjoyable individually paced atmosphere that the children love. (Lally et al., 1969-70.)

In September 1971, R. Lally and L. Smith presented these results of the new program at the annual meeting of the American Psychological Association:

TABLE 9.4

The Four Differentiated Environments*

Room 1	Large muscle room: climbing apparatus, large blocks, cardboard boxes, steps, riding toys, balance boards, etc. Probably only one adult necessary here -- one with high tolerance for noise and activity.
Room 2	Small muscle activities (largely convergent): puzzles, manipulative stuff, magnifying glasses, crayons, etc. Probably one adult sufficient most of the time. Requires a person skilled in verbal elaboration, sentence modeling, concept development.
Room 3	Listening and looking activities -- books to look at, stories to hear, records to hear (earphone), filmstrips to see, flannel board presentations. One adult most of the time who will periodically read a story or present something to those present and interested (with option for children to leave when interest wanes).
Room 4	Expressive activities (largely divergent): housekeeping, art media (salt, play dough clay, points, etc.), water play. Probably two adults necessary -- with high tolerance for mess and noise.

*Lally et al., 1970 (Table I)

> Of the twenty-seven children in the program, varying numbers received entry testing and mid-point testing on different developmental schedules. Seventeen children were assessed at both times on the Stanford-Binet, thirteen children on the Peabody Picture Vocabulary Test (PPVT), and fifteen children on the Preschool Attainment Record (PAR).
>
> No differences were found between the scores on the entry and mid-point tests on any of the measures. (Lally, J.R. and Smith, L., 1970.)

Table 9.5 represents the scores from both testings of the three measures used, and the amount of time children spent in the program between testings.

Demonstration Project in Infant Care and Education Ontario Institute for Studies in Education in collaboration with the Canadian Mothercraft Society; Director, Wm. Fowler. Fowler's Demonstration Project was designed to study and influence advantaged and disadvantaged infants in both group day care and at home in all major aspects of functioning, but especially their cognitive (including language), socio-emotional and motor processes (Fowler, 1971).

The program was housed in a two story mansion with sleeping rooms, play rooms, administrative offices, and observation lab and outdoor play space. The age range of the children was two-30 months, 30 months being the date of final testing and "graduation". The adult to child ratio varied within the three basic developmental caretaking groups: zero-12 months had a one to two ratio; 13-21 months with one to three; 22-30 with one to four. The groups were mixed in caretaking routines and play to create more opportunities for leader-follower modeling.

The program was organized around three forms of activity: (1) day care routines necessary for attending to basic needs, (2) free play indoors and out equipped with age-appropriate, educational toys and materials; (3) guided learning in inter-active play individually and in groups of two or three. Each of the three areas of activity was regarded as an opportunity to stimulate and relate to the child and specific techniques were developed to those ends.

Fowler made extensive use of measures of cognitive and motor development, namely Bayley Scales of Mental and Motor Development, the Kohen-Raz subscales of Bayley Mental Scales, the Stanford-Binet, the Uzgiris-Hunt Scales of Sensory Motor Development, the McCarthy Assessment of Language Development, Infant Adaption Scales and a Focused Learning Project Measure.

TABLE 9.5

Mean Scores and Time In Program for Family Style Children*

Measure	Entry Test		Mid-Point Test		$\bar{X}$ Time Between Tests	$\bar{X}$ Age at Post Test
	$\bar{X}$	SD	$\bar{X}$	SD		
Binet N=17	112.6	13.0	115.5	10.7	5.6 months	40.2
PPVT N=13	95.1	16.2	98.1	14.4	5.5 months	41.8
PAR N=15	120.5	21.5	123.0	18.3	8.0 months	38.4

*Lally, R.B. and Smith, L., 1970 (Table II)

While Fowler has developed an impressive program and has administered a wide variety of tests, his number of cases is so small and there are so many inadequacies in his research design that the results are not persuasive for the policy maker. Many of his findings are not significant but he does show a trend of IQ gains associated with length of time children remain in the day care program. For example, he reports a gain of 36 points on the Bayley Mental Scales for experimental children over a 15-20 month period (18 points for home reared controls) but the sample includes only 4 subjects!

The Milwaukee Projects: An Experiment in the Prevention of Cultural-Familial Retardation 1,2,3. Infant Education Center, University of Wisconsin. Heber and Garber have devised a highly specialized intervention program for children of mentally retarded mothers (IQ<70) of lower income, inner city families. Beginning in the first few weeks of life they are picked up in their homes early each morning and transported to the Center where they remain until late afternoon. "Infant teachers" transport them and follow an intensive program of stimulation that has been prescribed in detail. It has been designed to facilitate achievement motivation, problem solving skills and language development.

Each teacher has undergone an eight month training period before joining the active staff. Each child has his own teacher until 24 months when he joins a group of five other toddlers and three teachers, each specialized in one of three areas: reading, language development and expression, or math. At three years his group grows to include eight children and at four years there are a total of 11. The teaching staff remains at three per group, one of each specialty.

Each activity is precisely structured although there is some flexibility in scheduling to allow for initiative from the child and teacher. Each class runs for 30 minutes, 20 minutes of stimulatory exercises, 10 minutes for the child to use the materials in any way he wishes. The classes are interspersed with free play, naps, meals and Sesame Street.

The goal is the prevention of retardation in the off-spring of retarded mothers. If the experimental children demonstrate normal intelligence at the age of six or seven the designers of the program will consider their scheme to have been successful. If a retarded level of functioning is the norm then it will be clear that intensive exposure to learning experiences was not sufficient to counteract possible genetic predisposition for retardation.

Forty mothers were identified, two-thirds of the children have been randomly placed in the experimental group, the remainder are controls. The oldest was about four at the time of the report (Heber and Garber, 1970). An intensive schedule of measurements included standardized tests of development and intelligence and experimental measures of learning and performance, and of language development.

The trends are dramatic and far exceeded the expectations of the investigators. The experimental group evidenced a marked spurt in vocabulary production between 19 and 25 months, a spurt which did not occur until 28 months for the controls. Their comprehension was also significantly superior to the controls.

Cattell and Binet data were recorded from 24 months on. At 42 months the discrepancy between the experimental and group means was 33 points with some of the children testing as high as 135.

The researchers remind their audience that the experimental infants were test-wise after the repeated measurements and that their apparent acceleration in the development could diminish. The controls were not considered to be so test-wise as the experimental children since they were tested only periodically while the daily exercises for the experimental group were similar to the tests.

Costing

During the last few years several estimates of the per child cost of full day care have been published. These cost estimates seem to vary considerably. There are three major reasons for these differences which have to do with data questions, pricing questions and quality and efficiency questions.

The first two issues can be dealt with by standardizing the units of service (e.g., whether full day care is constituted by seven or ten hours) and by adjusting for region of the country and inflation.

Quality and efficiency questions cannot be managed so easily. Quality cannot be determined by any absolute standard; it has to be agreed upon. Until we have a definition of quality care it is impossible to discuss efficiency, since efficiency implies the delivery of a given level of quality at the least possible cost.

In this section we will present the costs given in three major national studies followed by a summary analysis[13] of the data, pricing and quality questions which account for the variance between the different sets of figures.

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[13] This summary is based on "Economics of Child Care Testimony" of Mary P. Rowe before the Senate Finance Committee, September 23, 1971, pp. 18-40.

The Children's Bureau Study, 1968

Jule Sugarman submitted the following costs for day care to the Children's Bureau of the Department of Health, Education and Welfare.

	Minimum	Acceptable	Desirable
Group Care of 3-5 year olds	$1,245	$1,862	$2,320
Family care of 0-6 year olds	$1,423	$2,032	$2,372

Minimum quality was defined as "the level essential to maintain the health and safety of the child, but with relatively little attention to his developmental needs"; acceptable quality was defined "to include a basic program of developmental activities as well as providing minimum custodial care"; and desirable quality was defined "to include the full range of general and specialized developmental activities suitable to individualized development" (L.C. Feldman, National Committee for the Day Care of Children, "Memos to Staff, Senate Finance Committee. Re: Day Care Program Authorized by H.R. 12000").

ABT Associates, Inc., 1971

ABT Associates, Inc. of Cambridge, Massachusetts did an extensive national study of day care and concluded that the average cost per child in group day care that would be classified "desirable" is $2,349 per year based on average daily attendance, or $2,067 on the basis of enrollment. The centers on which this average is based do not provide all of the services included in Sugarman's figures. Sugarman's estimates include the cost of transportation, social workers' salaries, a more favorable staff-child ratio and more specialized classroom personnel while the ABT costs do not.

Westinghouse-Westat Day Care Survey, 1970

The Westinghouse-Westat Survey shows strikingly different results from the Sugarman and ABT figures. It defines three types of day care on the basis of program goal rather than succsss at achieving goals. Type A (custodial) were those centers which offered food, shelter, and supervision, but no education or other services. Type B (educational) offers all of the services of Type A plus an educational program. And Type C (development) offers all of Type B's assets plus all or some of the following components: health care, parent participation, and counseling. The Westat Survey did not evaluate centers as "poor", "good", or "excellent".

The results indicate that Type A costs averaged $324 a year, B about $540, and C $1,368 a year for each "full time equivalent" child.

Data Questions

The standard form used by ABT Associates includes the following units:

- -- a full day program is figured at the rate of 10 hours;
- -- a full year is figured at 250 days (52 weeks and 10 holidays);
- -- FTE's (full time equivalents) are figured in terms of hours of service delivered (this results in a figure about 15% higher than if centers were completely filled throughout the year);
- -- cost per child is figured on average daily attendance rather than on enrollment.

Sugarman's units are the same except for cost per child year. He figures this on the basis of enrollment which according to ABT is about 12% higher than average daily attendance, and this deflates his figures.

In the case of the Westinghouse-Westat Survey, the units are not comparable.

- -- a full day program is figured at only 7 hours;
- -- the number of days per year is not specified;
- -- FTE: two part time children are considered equivalent to one full time child even though the average attendance time for a part time child is only 2 to 2 1/2 hours.

Discrepancies other than those centered on different standard units include:

- -- staff-child ratio: for ABT and Sugarman this falls within Federal Interagency Guidelines. For Westinghouse-Westat centers types A and B the ratio is not within the Guidelines (Type A averages about a one to fifteen ratio).
- -- Space costs in the Westinghouse-Westat Study seem to have been reported unevenly and less reliably than other costs.
- -- In-kind resources: ABT found that donations ranged from 5-70% of the budget (averaging 23%); these costs were probably much underestimated by Westinghouse-Westat.
- -- Salary level: the median salary reported by Westinghouse-Westat for child care staff and directors was just above the poverty level; other staff salaries were reported to be below the poverty level for a family of four; the other two studies figure on the basis of higher salaries.

-- Scope: Sugarman's "desirable" care includes more services than included in the ABT estimate, and the ABT figures do not directly correspond to the services included in Type A, B and C centers from the Westinghouse-Westat Survey.

Pricing Questions: Regional Differences and Inflation

Both Sugarman and the ABT study present costs based on national averages. Since costs can vary as much as 100% between regions, states or urban and rural areas, it is imperative to average costs in order to compare them nationally. It is also important to note that each of these studies was completed in different years so that inflation accounts for some portion of the difference in the cost estimates.

Costs and Quality

Assuming that all data and pricing questions can be resolved, the rest of the variance in costs should reflect differences in quality of services delivered. In the earlier sections of this chapter we have shown that output cannot be adequately measured. Short of dramatic damage or growth we cannot be certain of the effects of a child's participation in day care. Subtle damage or gain can only be assessed intuitively. Consequently, quality has no set definition but is usually considered to relate to these elements:

-- staff-child ratio;

-- presence or absence of an educational program;

-- program scope: presence or absence of hot meals, snacks, transportation, medical care, staff training, parent counseling, community work, etc.

Other Variations

There are several other factors which can cause costs to vary which do not fit in the above analytic categories.

Mixed home-center care system. Home care seems to be more suitable and more economical for children who are younger than three years or who suffer from specific disabilities. For normal preschool age children, however, group care in centers seems to be more economical (given comparable wage levels for home and center child care workers). A mixed system of home and center care allows children to be cared for in their least costly situation. Mary Rowe speculates that the per child cost averages about $2000 per year for zero to six year old children (Rowe, 1971).

Systems of centers. Research results are unclear at this date, but there may be economic advantages to running systems of centers with central administration rather than entirely separate ones.

Economies of scale. The ABT study shows that staff time for teachers and nurses rises proportionally with the number of children enrolled. In the case of cooks and maintenance staff there is need for additional hours of work but usually not for increased numbers of staff to service a center for larger numbers of children. Administration costs rise slightly less than proportionally.

Conclusion

There has been so little use of day care as a child development intervention, and therefore so little evaluation, that the researchers themselves do not have a sophisticated grasp of the issues involved. Devising reliable infant scales remains one of the most perplexing of unsolved mysteries.

The effects of any style of day care program could range from harmful to positively exciting. We found no reports of measurable harm, and only a very few highly specialized and costly models produced dramatic benefits. The conclusion, then, is that the vast majority of day care programs implemented within the limits of the federal and state regulations appear to be neutral in their effects on human development insofar as they can be evaluated by existing techniques.

We do not mean to suggest that the benefits of day care for the mother or the family may not be dramatic or positive. The possible benefits to those other than the child will be considered briefly in Chapter 12 of this study.

TABLE 9.6

Summary of Day Care Services

TYPE OF DAY CARE	Distinguishing Characteristics	Variations	Advantages for Family Life	Disadvantages for Family Life	Additional Services Needed to Assure Optimum Child Development
HOME CARE PRIVATE ARRANGEMENTS	1.Child remains in his own home 2.Child caregiver comes into child's home 3.Parents pay caregiver directly	1.Caregiver frequently is also a housekeeper 2.Caregiver may be private agent or member of a commercial service	1.Child remains in familiar, secure place 2.Convenience: flexible hours, no frantic, early morning packaging up the child 3.Economical for large family 4.Family can be together 5.Caregiver can be important addition to family	1.Expensive for small family 2.Anxiety about selecting caregiver 3.Anxiety about whether caregiver will be reliable in showing up and dependable in service 4.Lack of uniformity in capacities of caregivers, some may have poor talent for child rearing 5.Caregiver may be outsider to the neighborhood	1.Occupational licensing of caregivers 2.Training programs for caregivers 3.Temporary child care help when needed, including neighborhood assistance 4.Information and referral service for parents
HOME CARE AGENCY PROGRAM	1.Child remains in his own home 2.Child caregiver comes into child's home	1.Caregiver may be part of a home-teaching program for child siblings, and parents	1.Child remains in familiar, secure place 2.Program brings enrichment to family	1.Caregiver may be outsider to neighborhood 2.Uneconomical for one child	1.Occupational licensing of caregivers 2.Training programs for caregivers

TABLE 9.6 (Continued)

TYPE OF DAY CARE	Distinguishing Characteristics	Variations	Advantages for Family Life	Disadvantages for Family Life	Additional Services Needed to Assure Optimum Child Development
HOME CARE AGENCY PROGRAM Continued	3.Parents obtain child care as part of an agency service	2.Home care may be related to a comprehensive parent-child service from a center 3.Care may be supplemented by visits from health or home economics specialists, teachers, social workers, etc.	3.Family can be together; cross-age group 4.Convenience for family to stay at home 5.Specialized services available through agency 6.Especially useful for large families	3.Families may resist agency intervention	
PRIVATE FAMILY DAY CARE	1.Child goes to caregiver's home 2.Care is in family setting in neighborhood home 3.Arrangement is made privately between parents and caregiver	1.Size and composition of family group may vary 2.Caregiver may have children of her own	1.Child remains in familiar neighborhood with caregiver of his parent's liking 2.The nearness of the neighborhood home makes for convenience	1.Uneconomical for large families 2.Anxiety about selecting and keeping the caregiver 3.Lack of uniformity in capacities of caregivers; some may have poor talent for child rearing	1.Licensing program 2.Neighborhood consultation, training 3.Health visiting 4.Information and referral service 5.Home teaching programs

TABLE 9.6 (Continued)

TYPE OF DAY CARE	Distinguishing Characteristics	Variations	Advantages for Family Life	Disadvantages for Family Life	Additional Services Needed to Assure Optimum Child Development
PRIVATE FAMILY DAY CARE Continued			3.Flexibility of hours and work schedules is possible 4.Child has new teaching experiences that he would not have at home 5.Economical for one or two children 6.Useful for full-time, part-time, and irregular employment 7.Children of all ages can be accomodated	4.Arrangement sometimes lack stability	
AGENCY FAMILY DAY CARE	1.Child goes to caregiver's home 2.Care is in family setting	1.Size and composition of family group may vary 2.Caregiver may have children of her own	1.Provides service, quality of care and accountability --agency provides complete service	1.Some parents avoid agencies 2.Parents have less autonomy in selecting caregiver	1.Licensing 2.General education in child care and child development

TABLE 9.6 (Continued)

TYPE OF DAY CARE	Distinguishing Characteristics	Variations	Advantages for Family Life	Disadvantages for Family Life	Additional Services Needed to Assure Optimum Child Development
AGENCY FAMILY DAY CARE Continued	3. Agency supervises placement of child and agency pay caregiver	3. Combined home/day care teaching	1. continued... for parents, children, and caregiver, including certification and training of caregivers, supervision of placement, and social services for parents 2. Especially useful for parents who need professional help 3. Supports provided for stable arrangements 4. Give careful attention to the family situation for child 5. Flexibility of hours, services 6. Children of all ages can be accomodated		

TABLE 9.6 (Continued)

TYPE OF DAY CARE	Distinguishing Characteristics	Variations	Advantages for Family Life	Disadvantages for Family Life	Additional Services Needed to Assure Optimum Child Development
CENTER CARE AS PRIVATE FACILITY	1.Child goes to a group care facility 2.The facility is supported by fees	1.Private commercial day care 2.Church operated; parents cooperative (frequent use of volunteers) 3.Industry-located and operated 4.University-located, non-profit services	1.Stability of setting 2.Auspices may be familiar for parents 3.Clientele may be acquainted and have things in common 4.Potentially capable of providing care during any work shift of day or night	1.Distances are generally less convenient 2.Expensive for large families 3.Hours may be restricted 4.Standards not uniform; may be high or low	1.Licensing of facility 2.Occupational licensing for staff 3.Program consultation and promotion of standards for child care programs 4.Health service 5.Social services available 6.Continued education and training for staff
CENTER CARE SUPPORTED BY COMMUNITY AGENCY	1.Child goes to center 2.Center is supported by fees plus public funds 3.Program accountable as a community service	1.Could be neighborhood based 2.Could be located at place of work 3.Could be mobile unit for migrant labor	1.Stability of setting 2.Has trained staff and professional direction 3.Offers enriched child development programs	1.Distances are generally less convenient, especially when centers are fewer and larger 2.Some centers are too large 3.Requires more investment in administration	1.Licensing of facility 2.Occupational licensing

TABLE 9.6 (Continued)

TYPE OF DAY CARE	Distinguishing Characteristics	Variations	Advantages for Family Life	Disadvantages for Family Life	Additional Services Needed to Assure Optimum Child Development
CENTER CARE SUPPORTED BY COMMUNITY AGENCY Continued			4. Has adequate number of staff 5. Is in best position to offer comprehensive day care service 6. Is able to provide or obtain specialized professional services for children and parents 7. Setting can become a cultural center for neighborhood and family life 8. Setting has economic ability to tide the family over temporary inability to pay the fee and to apply a sliding fee scale 9. Capable of providing care during any work shift of the day or night	4. Hours and program constraints make use of the center sometimes difficult 5. Relatively uninfeasible for large families to use	

Chapter 10: Family Intervention Projects

Summary

Family intervention projects either supplement or replace child development programs in day care, preschool, elementary school or health. Goals include enhancing the physical care, cognitive and social development, and emotional sustenance of children.

Four types of family interventions are examined in order to assess their benefits: Parent education, parent training, family casework and parent therapy.

Parent education projects focus on imparting knowledge (in order to improve the physical, social and economic life of the family and hence the child), most commonly via lectures, discussion groups, printed materials and counseling in schools, churches, hospitals. Audio-visual media have not been widely used. Parent training projects focus on skill enhancement, especially skills believed to lead to greater cognitive development of infants and young children. (Training can take place in the home only or in the home and a center. Usually in programs with a center component, the child also attends preschool.) Family social casework as discussed here refers only to the social service referral activities of caseworkers. Parent therapy is of two distinct types. Family therapy stresses the socio-emotional sustenance function of parents; it has long been used by psychologists, social workers, counselors and school guidance personnel. Behavior modification therapy for parents, a recent intervention technique, stresses the function of the parent in social teaching and learning of children.

All family intervention projects reviewed in this section share the assumption that for optimal child development, family functions must be improved. This improvement is attainable (sometimes, it is claimed, only attainable) by direct action on the family--not direct action on the child and not economic, political and social reform of institutions.

Effects of Family Intervention Projects

In none of the categories are effect or benefit measures without serious problems. However more clear-cut measures of benefit are found in parent training, family casework and behavior modification therapy projects. We are also more certain of the validity of the findings of these intervention activities.

--Parent education typically produces no useful evaluation data. In the few cases it does, changes in parent behavior with direct implications for improved child development are not measured. It may be that parent education might be successful for a very limited number of families who are considered to be "disadvantaged" if the projects included day care and baby sitting and if they were more attuned to the needs and learning styles of the particular population of mothers and fathers served. But parent education probably will never involve many fathers, and mothers who have serious survival problems (income, housing, safety) will not be responsive.

--Parent training for cognitive stimulation does produce useful, but often flawed, evaluation data. IQ, or achievement score gains are usually statistically significant and of moderate magnitude. These gains decline somewhat with time but remain for at least a year or more. Trained paraprofessionals are as effective as social workers or professional teachers in their parent training role. Variation in curriculum leads to similar results. Important side benefits include possible IQ gains on younger siblings, less attenuation of gains, and employment opportunities for low income parents when paraprofessionals are used.

--Family casework, used for social service referral, works only when supplemented by adequate income support and by an adequate level of social services in the community when concern for helping poor people is strongly felt by public and private service agencies. Most progress is registered in instrumental areas of family functioning (child rearing, health care, homemaking practices).

--Parent therapy and counseling in its psychoanalytic form is barren of measured results although rich in professional testimony. It is practiced mainly by white middle class professionals on a white middle class population. Hence it would not necessarily be useful to disadvantaged populations defined by race or low income. It is too early to decide whether behavior modification for parents is a useful strategy. Early results do look promising.

Chapter 10: Family Intervention Projects

The Strategy and Goals in Family Intervention Projects

From the literature on family functioning we can identify three major roles the family plays in influencing the development of children: providing for the child's 1) physical needs, 2) social training and cognitive stimulation, and 3) emotional sustenance. The functions contribute to specific aspects of a child's development: health, learning, and socio-emotional state. Neither theory nor research has specified the exact mechanisms by which a child's development and his family functioning are linked. While speculation abounds, there is little agreement about how these family functions produce variation in measures of health, learning, and affect. Nor do we know the relative importance of internal (individual and family) versus external (social and economic) factors.

In this section we shall consider family intervention projects for child development to be those efforts directed toward changing parents' behavior or family functioning in order to benefit the children in the family. Some of the benefits might be enhanced physical health, learning ability and socio-emotional development. In the absence of certain knowledge, intervention efforts do not wait. Instead they are typically based on beliefs (and some evidence) of differences between certain children and their families called "disadvantaged", and other children and their families who are "advantaged". The goals of the projects become to make disadvantaged children more like the "advantaged". The strategy rests on the assumption that by changing the family, one will change the child. Lying behind that assumption is the belief that the family is the locus of the child's problem, and hence it is the family (rather than social and economic conditions) that must be fixed. While it is certainly true that one might consider it necessary to fix family, social and economic conditions simultaneously, the emphasis and priority of family intervention schemes are that family change will not inevitably and automatically follow social or economic change. Hence society must intervene to "reform" the family. If one believes that defects lie primarily in the society and economy it would appear more logical to favor income, housing, economic and power equalization, employment, and social insurance strategies.

The differences between a disadvantaged family and a middle-class family are complex and manifold. The comparison is a comparison between two systems, yet we do not know how to map the family as a system. Most family interventions probably rest at root on an implicit or explicit, common sense or scientific, definition of specific contrasts between the advantaged middle-class family versus the disadvantaged lower-class family. Our data suggest that, in contrast with the advantaged family, the disadvantaged family spends less time with children, uses a more restricted language code, offers fewer books and playthings, uses more physical punishment, depends more upon shame than upon guilt, is more often led by female heads, and so on. From formal or informal observations, it is inferred that disadvantaged parents are less informed and less capable of making decisions relevant to the child's schooling or health, or that the family confronts important practical obstacles to bringing the support and guidance in health and schooling that is offered by the middle-class family. We arrive at specifications of differences between disadvantaged and advantaged families by one route or another, and these differences are the basic targets of family intervention projects.
Projects in family intervention generally may be seen as acting upon some

of these differences. Their effectiveness probably must be judged by their success in closing one or another of the specific "gaps" they choose to attack.

There are, of course, serious weaknesses in this overall strategy of picking and attempting to remedy differences. The strategy proceeds by assuming that a difference is always bad, and that it is always the disadvantaged side of the difference that is the wrong side. There is an insensitivity to the process, because it is a process that attempts to bypass thorough understanding of the differences between two different adaptive systems. The strategy, if used insensitively, leads inexorably to a kind of wholesale attack on the life style of the disadvantaged family. Lately, there has been more and more public concern about the insensitivity, ethnocentricity, and misguidedness of intervention programs directed at poor families.

Categories of Family Intervention Projects

Specifically, in this section, we shall be looking at four types of family intervention projects in child development which are based on commonly held assumptions about the most strategic ways of closing "gaps" between poor and non-poor families in their child-rearing functions. The first strategy, social casework (through social service referral), posits that a gap exists which must be narrowed between social or community resources for poor and for middle-class families. The second strategy, parent education, emphasizes the knowledge gap between different types of families. Parent therapy, the third kind of intervention, proposes that poor families can best be aided in their functioning through righting their socio-emotional instability. Parent training, the last category, stresses the development of skills presumably lacking in lower-class parents which are believed to enhance cognitive development.

The oldest of the intervention efforts is family social casework. Caseworkers do not operate exclusively on the family as a unit, but there is increasingly an emphasis on treating the family together and not just individual members of the family. The role of caseworkers in family intervention falls in all three of the identified functional areas affecting children's health, cognition, and socio-emotional state. Caseworkers see their role as enhancing the family's ability to physically provide for, socialize and emotionally nurture children.

Another traditional means of family intervention, parent education, similarly addresses itself to improving all three family functions. Usually family life education programs emphasize changes in one or more functional areas. Some are designed to educate parents to improve physical care; others to improve social teaching and cognitive stimulation behaviors; still others aim at improving affective behavior.

In contrast to the above traditional family interventions which are more undifferentiated, two recent types of family intervention are more narrowly focused. Parent therapy and counselling stress the importance of the family and especially of the early parent-child emotional relationship in influencing affective or socio-emotional child development.

Such interventions have arisen from a variety of personality and psychoanalytic theories. In addition, special systems of therapy such as client-centered therapy, group therapy, and transactional analysis have been employed. Very recently, a different kind of parent therapy has been attempted by using principles derived from behaviorist schools of psychology. Behavior modification techniques so far have aimed less at socio-emotional development and more at social learning.

Another recent category of family intervention programs is concerned with training the mother to "improve" her cognitive stimulation and social training practices. Research findings published in the last 30 years, which are gaining considerable influence, emphasize aspects of the mother's socialization activities (how and how much she talks and plays with her child). The distinction between these parent training projects and the parent education previously listed rests on the distinction between knowledge and skill. Whereas parent education assumes merely that a knowledge gap exists between poor and middle-class parents which can be remedied through teaching, parent training goes beyond this. It is based on a belief that low-income parents need more than to know about how to "socialize" their children. In addition, they must be trained for the skills and abilities required. Thus a skill training strategy, rather than merely an instructional one, is required.

To summarize, four types of family intervention programs have been identified: family social casework, parent education, parent therapy, and parent training for "cognitive" stimulation. The first two strategies are more global in their emphasis. They are meant to enhance all three family functions. The latter two are more narrowly focused on the socio-emotional and cognitive functions respectively. While few intervention projects are pure examples of any one of the strategy types most mentioned, there are differences in emphasis. Existing projects have been placed in one or another category for discussion, based on an overall assessment of which intervention strategy seems most emphasized.

Criteria for Selection of Projects

Among projects in the four identified categories of family intervention for child development, only a handful out of literally thousands of past and on-going projects are discussed in detail. Ideally, one would identify examplary projects on the basis of research and evaluation activities which have measured effects on family functioning, and which have attributed such improvements to the presence of the treatment-intervention rather than to some set of extraneous causes. Further, there should be evidence that the improvements in family functioning which have taken place have meaningful consequences in improving the physical care or social learning and cognition or emotional nurturance of the child. In other words, we would want to know what kind and how much change in a family was effected by the project and what this meant in terms of a child's IQ score, health, nutrition, attitude or feeling of trust, or self-confidence.

Neither the state of knowledge of the relationship between family functioning and child development nor the present ability of social scientists to measure effects in the realms of the family and the child enables one to proceed confidently with ideal evaluations.

Criterion measures of family and child progress. We know that all three areas of family functioning play a crucial part in determining a child's state of health, learning and affect. Measures have been created by researchers to assess family functioning; among them are gross demographic indices, rating instruments of functioning, observation devices for aspects of family interaction, and parent attitude scales. These measurements are of uneven reliability (see Chapter 5). Moderate to high zero-order correlations exist between some of these family measures and measures of child development. However, most correlations are established among small samples of unspecified representativeness. When more controlled natural experiments are used or multiple correlation techniques introduced, the original association declines and sometimes even disappears. For example, father absence by itself correlates with lower child IQ in certain samples. As a result of this observation, it has been speculated that father absence is a pathogenic family condition which retards a child's cognitive development. Yet in a careful review of such studies, Herzog and Sudia (1970) contend that no persuasive evidence exists to support this argument in the case of father-absent black families. Once a variety of other factors are controlled for, including race, SES or income, father absence no longer seems to be as pathogenic. It is probably true that few single "defects" in family functioning alone significantly retard child development. Taken together, many "defects" do seem to be associated with retarded development. But no guidance is furnished as to which "defects" are more crucial or which are more strategic to work on. It is arguable that intervention actions taken outside the family, such as ending employment discrimination and increasing employment opportunities for blacks, might improve all family functions in black families far more than interventions designed to "fix" families directly. Finally, it is becoming increasingly clear that certain criterion instruments of child development are severely biased against black and lower-class groups in general, and might not register optimal development even when it does occur.

Acceptable research design. Recognizing the many obstacles to ideal evaluation owing to inadequate criteria measures, one ought not expect project reports in family intervention to yield definitive data for evaluation and decision making -- and indeed they don't. In reviewing the evidence, we accepted any measured effects of changes in family functioning and/or child development, bearing in mind always that reported measures are not of equal quality, i.e., validity, reliability, freedom from bias, real importance to child development. For example, in the category of parent education projects, changes in parent knowledge in certain spheres of family life, as long as they appeared reasonably related to project activities, were reported albeit the relation between improved parent knowledge and improved parent and family function has never been explored by research in adult education.

Given measured effects, it was required only that some good indications exist for attributing the improvement in function to the experimental intervention rather than to a host of extraneous variables. The most acceptable way to assure this is by use of a control group selected randomly from the same population as the treatment group. Quasi-experimental designs, such as time series using the same group, were acceptable but rarely used. Most commonly, matched control or comparison groups were used. Although the mere use of a control group is the minimum standard of acceptability, questions were raised when appropriate about other threats to internal validity not accounted for by the presence of controls.

If effects were measured, controls employed and the results found to be statistically significant in favor of the intervention treatment, the project was included. In parent education, so few projects met the minimum criteria that the projects reported are illustrative rather than exemplary.

Costs. The project reports which have been examined typically contain no cost data figures; journal articles and reviews of the literature never do. Although there are probably a few mimeographed reports where costs are reported, we have been able to obtain few of them. Especially in the case of old projects, such data is buried in the files of family agencies scattered about the country. It seems of dubious worth to make the effort required to locate this information on costs, which is probably obsolete.

Instead, an attempt has been made to organize the presentation of projects around types of delivery systems. By organizing the reporting of intervention categories by delivery systems, the major cost elements are implied. For parent education, lecture delivery, small discussion groups, published material, and radio and television delivery can be costed separately. For parent training, costs would differ between primarily home-based and home- and center-based programs; the use of professionals or paraprofessionals would probably introduce the other major cost distinction. Social casework and therapy imply a one-to-one social worker or therapist to client service; professionals are almost always used, although there is no evidence from controlled studies that professional training has produced better effects (Goldstein, 1969; Brown, 1968). Counselling and behavior modification therapy may be performed like therapy or may be done using small group discussions as in parent education or small group training.

Parent Education Projects

Kraft and Chilman (1966) define parent education projects as those directed toward adults with the goal of imparting knowledge so as to improve the physical, emotional, social and economic life of the family. Such programs aim to teach improved housekeeping, more responsible money management, preparation of more nutritious meals, and sewing. Thus they are directed mainly at improving the family function of providing physical care for the child. A few parent education programs in child management and development have goals of informing parents so as to make them more effective in their function as child socializers or nurturers, thus leading to enhanced cognitive and affective child development.

The most widely used means of delivery of information to parents is through lectures and discussion groups, both formal and informal. Groups usually meet in a centrally located facility such as a school or community center. Other places sometimes used are mobile facilities (see Mobile Kitchen project) or homes of community members. A second means of delivery is printed material (books, magazines and pamphlets). Audio-visual media (commercial and educational television) account for a relatively small number of parent education projects.[14] Individual counselling is another means of delivering information to parents. Aside from its use by health and school personnel (pediatric and general practice counselling, public health and visiting nurse counselling, parent conferences with teachers and guidance counselors in schools), counselling is a major strategy of clergymen and often is part of a social welfare organization program.[15]

The effects of parent education programs. Kraft and Chilman (1966), the most complete review of the literature on parent education programs for low-income families, surveyed major existing programs using questionnaires and site visits as well as analyzing printed reports. From 82 reports of projects returned to them plus numerous published reports, they were able to find only two which included a systematic approach to research and evaluation: the Friends Neighborhood Guild home management project, and a relocation project in Washington, D.C. In both cases, the assessment did not reveal any statistically significant differences between experimental and control groups. Kraft and Chilman concluded: "The available evidence does not appear to allow for any firm conclusions as to the usefulness of parent education among low-income families" (p. 20). Brim (1965), in an earlier review of over two dozen studies of parent education programs for child rearing, found twelve studies done in a "complete experimental design" (i.e., at least with a control group). No evidence was provided in any of these studies about the effect of parent education in changing a child's behavior. In only one study was there weak evidence that parent education affects parent behavior.[16] There was some evidence of effect on parent knowledge in the short run in two of the remaining projects, one a group discussion and one a printed-material delivery (Brim, 1965, pp. 287-308). Brim ended his review by noting that: "The issue of how effective is parent education in changing parents or their children remains unsolved at present" (p. 312).

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[14] A recent survey, however, has suggested that while many parents had had some contact with books and pamphlets, these materials were not especially influential in child-rearing behavior. Magazines and newspapers were somewhat more influential, but could not match the effects of personal contact. Radio has not been particularly significant as a medium for parent education, and television has had only limited value, even though over 90% of the households in the U.S. have a television set (Amidon and Brim, 1972). This is not to deny the substantial impact of commercial television programs and commercials not specifically intended to be "parent education". Almost certainly they provide a model for middle-class life style and help shape the definition of needs and aspirations for the lower class.

[15] The distinction between education and therapy in counselling is often fuzzy. Brim (1965) makes the point that whereas therapeutic counselling is directed to unconscious parts of the personality, education is directed to the conscious parts. Even a simpler distinction is that educational counselling concentrates on informing or imparting knowledge while therapy concentrates on changing attitudes and behavior directly.

To supplement the above two major reviews, the writer undertook to search the ERIC files on parent education with emphasis on recent studies. Only one media study which uses a control group has been turned up -- Project Gap-Stop (Mendelsohn et al., 1968). No meaningful improvement was reported.

In a recent 147-item bibliography on parent, home and family life education (ERIC, 1970), no studies on parent education (as defined above) include a control group. Most use nothing but interview and questionnaire data about the attitudes, interests and feelings of parents who have completed the program. This ignores the problems of attrition and volunteer bias and involves additional problems of response bias, halo effects and a host of other possible factors which invalidate information gained using such techniques. Two unpublished updatings by Chilman (1968, 1970) find that all the more recent evidence "generally confirms the findings" reported in the original Kraft and Chilman analysis. Many projects reported no success, such as the Howard University Children's Bureau effort, Ira Gordon's initial parent education model, and the Duke University education program for postpartum mothers. Three carefully controlled studies (Belton and Goldberg, 1966; Flickman, 1968; Clarizio, 1966) reported no observable differences. Three other studies which did report effectiveness of parent education (Fuchs, 1968; Borsteman, 1964; Hereford, 1963) are criticized for serious methodological flaws (Chilman, 1968, pp. 50-60).

Serious problems plague most research on parent education:

1. Evaluation is typically done by the directors of the projects or by project staff; this can cause serious bias in reporting of success where rating scales are used to measure changes.

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[16] Parent behavior was measured by experts' rating of the favorableness of a mother's self-reported child-rearing practices (handling of food refusals, methods of giving milk, encouraging the child to feed himself, father changing diapers, parents' asking child's permission to use his things for the new baby, using toilet chair for baby).

2. Project effects are hardly ever related to the accomplishment of the intended goal(s). Instead, projects for improved housekeeping, for sewing, or for nutrition are evaluated on vague mental health criteria such as "increasing self-awareness", "mitigating loneliness and inadequacy", "sustaining ego stress" (Kraft and Chilman, 1966, p. 17).

3. Rarely have follow-up studies been carried out to note lasting effects of programs. In one exception, the Friends Neighborhood Guild project (Lewis and Guinnessy, 1963), it was found that improvement occurred among those not treated also and that:

> ...among those who managed to improve on their own, the follow-up rating three months after the termination of the program reveals more sustained and continued improvement than among those who received service! (p. 231)

Lastly, it should be noted that the assumption of all parent education programs -- that information about fulfilling the family functions of providing physical care, socializing and emotionally nurturing the child, will translate into changed parent behavior -- is not tested by an evaluation based on how much new knowledge has been gained. The means designed to test this assumption are not appropriate. By exposing one group of parents to a program which emphasizes new and desirable ways of child-rearing behavior, it can be assumed that these parents will be more attuned to giving the "right" answers in a self-reporting questionnaire or interview. There is little certainty without direct observation that actual changes in parent behavior have taken place.

Because there are few studies in parent education with appropriate research design and measurement of effects, and because in those few studies no significant differences in parent or child behavior have been reported, it is difficult to come to a satisfactory judgment about the worth of parent education. It is also impossible for the writer to select exemplary projects on the basis of effects reported in the literature.

There is likewise no evidence concerning the interaction of delivery system and project goals in parent education. Common sense would indicate that delivery systems like television or printed materials would be more effective given certain goals (general information about health), while a delivery system like counselling would be more appropriate to convey information about a specific, individual problem.

> Most likely, certain methods do have greater efficiency when used with certain kinds of content and certain kinds of persons, but in parent education this has not been clearly demonstrated. (Brim, 1965, p. 196)

In the table that follows, we shall present examples illustrative of the various goals, delivery systems and reporting of effects rather than choosing exemplary cases. The goals may be improvement in one or more realms of family functioning:

A. Physical care

B. Cognitive stimulation and social training

C. Emotional (affective sustenance)

These goals may be delivered to families through:

1. lectures and demonstrations
2. small discussion groups
3. printed material
4. television
5. counselling

Conclusion. We conclude here with observations based largely on the Kraft and Chilman findings, which seem to represent the current "non-scientific" but useful wisdom about parent education for low-income families. The following statements are supported by most observers in regard to parent education for low-income families:

1. Parent education projects, especially sewing and child management, are popular with some low-income mothers. Kirschner Associates, Inc., (1970b) field observers were almost unanimous in reporting that Parent-Child centers had a parent education component which often was a highly popular part of the center program.

2. Parent education programs are not popular with fathers. This was found to be true "even when the leaders were men and the program was built around such male interests as carpentry, mechanics or athletics" (Kraft and Chilman, p. 13). In Parent-Child centers which necessarily focused parent education on concerns of child development, the fathers manifested the typical American male attitude, which is to regard such matters as women's concerns.

3. Parent education programs involve only a small number of target area parents. Attendance is low and sporadic, with a few hard-core participants; most efforts last only a few sessions and then fold (Brunner, 1959; Verner and Davis, 1964). The few who attend regularly, at least in the non-coercive programs, are the upwardly mobile poor. Observers are almost unanimous that the poorest, most disorganized "multi-problem" families are not reached by parent education programs.

4. Too many parent education programs for low-income families have not provided for day care or baby sitting (Mannino and Conant, 1969).

5. Parent education programs flounder in part because poor parents often lack time to attend and are preoccupied with more immediate and pressing problems. They often have unpleasant memories of schooling from their own childhood, and hence resist projects using lectures and extensive reading matter (Mannino and Conant, 1969).

6. Many low-income parents resent and resist middle-class attitudes and teachings which they feel are inappropriate to their life situation and which appear to them condescending.

7. When problems of income, housing, employment and physical safety are severe, few parents are responsive to parent education programs.

TABLE 10.1

Illustrative Projects in Family Education

Delivery Systems:

(1) Lecture-demonstration
(2) Small discussion groups
(3) Printed material
(4) Television
(5) Counselling

Family Function Goals:

(A) Physical care
(B) Cognitive stimulation and social training
(C) Emotional sustenance

(1) Lecture-demonstration

Project: Money management and thrift -- (A) physical care

Comments: "Money Problems and Your Family", a Family Life Institute program, was conducted for eight sessions by the Jewish Family Service of New York City in an effort to improve the behavior of tenants of a housing project. Forty-three families, chronically tardy in meeting rent payments, were invited to attend the Institute, which was described as employing "semi-coercive methods of involving participants". An average of eight to ten people attended the sessions. (Kraft and Chilman, 1966, pp. 41-42)

Evaluation: The investigator reports the following changes by the end of the program: improvement in payment of rent; better housekeeping practices; more willingness to get help from the community; better comprehension of the relationship between handling finances and family life; more constructive use of final sessions. She therefore concludes, "there is evidence that significant change in behavior did take place and that the participants did develop more mature and more responsible attitudes toward meeting their obligations not only as tenants but also as husbands, wives and parents in their family relationships" (Rogers, 1962). Note that all the above changes are reported by the constructor of the intervention program.

Project: Nutrition-Mobile Kitchen -- (A) physical care

Comments: Under the joint sponsorship of the home economics extension agent working with representatives of the Department of Agriculture and the Milwaukee

TABLE 10.1 (continued)

Department of Public Welfare, a special demonstration project was organized in the early 1960's to instruct low-income families on the use of donated surplus food. A special trailer, called a mobile kitchen, was dispatched to designated sections of the city. The location of the trailer was well publicized in advance of its appearance. (Kraft and Chilman, 1966, pp. 45-46)

Evaluation: None reported.

(2) Small discussion groups

Project: Home Management and Housekeeping, Friends Neighborhood Guild -- (A) physical care

Comments: As a cooperative undertaking of the Friends Neighborhood Guild and the Philadelphia Housing Authority, a demonstration project was conducted with the aim of assisting a group of poor housekeepers to avoid being evicted from a public housing facility. It was planned to offer the families a program of services including a mothers' discussion group, a homemaking consultant, a preschool play group, a teenage girls' discussion group, and teenage boys' discussion group, and a fathers' discussion group. (Kraft and Chilman, 1966, p. 15)

Evaluation: Three criteria were used to measure improvement: orderliness of rooms; cleanliness of walls, floors and furniture; and odor. Ratings were given to each family on the above criteria by housing authority personnel who were not part of the experimental intervention program. The investigator concludes that "comparison of the housekeeping scores of the experimental and control groups provided evidence favoring the experimental program but not statistically significant evidence." (Lewis, 1964, p. 225) However, in a fuller report of the experiment, it was noted that improvements occurred among those who were not treated, and that among the controls a three-month follow-up rating revealed more sustained and continued improvement than among those who received the experimental treatment. (Kraft and Chilman, 1966, p. 15)

TABLE 10.1 (continued)

Project:	Child development and child management -- (B) social training and (C) emotional sustenance
Comments:	A series of seven meetings with white low-income but stable working-class parents, around problems of acting-out elementary school children, was conducted in Philadelphia. Selected parents were referred by the schools to a "family life educator", a guidance specialist. Of 18 mothers invited, 11 agreed to attend the meetings. Each session began with coffee and cake being served, after which the leader conducted group discussions following the interests of the particpants with a major stress on parent-child and home-school problems. (Kraft and Chilman, 1966, p. 47)
Evaluation:	The program leader was also the evaluator. She reported that the sessions were very useful to the parents in permitting them to discharge their emotions and in making them recognize that they were not alone in their problems. The mothers reported that their children were improving in most cases as the discussions continued. "The most significant gain for the school was the improvement in the relationship between the parent and the principal and the teacher." (Pollack, 1963)
Project:	Education and Neighborhood Action for Better Living Environment (ENABLE) -- (A) physical care, (B) social training, and (C) emotional sustenance
Comments:	This was one of the most large-scale undertakings involving thousands of mainly urban poor families, funded by the Office of Economic Opportunity and administered by private social work agencies (Urban League, Family Service Association, Child Study Association). Its goals extended beyond education to include counselling, social service and community organization. However, the most characteristic and widespread activity was parent education in small discussion groups; training of staff members was undertaken by CSA, a parent education organization.
Evaluation:	The basic question addressed by the independent evaluating agency was whether low-income parents

TABLE 10.1 (continued)

can be reached by family education discussion groups. There were over 11,000 personal interviews with parents, plus 6200 records of attendance and services performed.

The greatest problem of the evaluation was the inability to get data from eligible non-participants. Given this limitation, it was found that 22% of the parents accounted for over 50% of the total attendance. Of 99 items in the interview attempting to assess changes in attitudes, especially toward child rearing and information about resources, 55 were statistically significant. However, the magnitude of changes was generally small. It was noted that the professionals in the private social work agencies generally reported positive experiences, greater identification with and more effective services to the poor (Simulmatics Corporation, 1967). A study by Rosenblatt (1968) of 301 ENABLE groups also reported some parent attitude change; but no statistical tests of significance or control groups were used.

(3) Printed Material

Project:	Child rearing practices: Pierre the Pelican -- (A) physical care and (C) emotional sustenance
Comments:	The Louisiana Society for Mental Health publishes a series, Pierre the Pelican, which contains information and suggestions for child rearing during the first year of life. Twelve four-page pamphlets are sent to the homes of all children whose births are registered, one each month (Rowland, 1948). The same pamphlet series has been used in North Carolina (Greenberg et al., 1953) and in Michigan (Michigan State Department of Mental Health, 1952). In the three studies, control groups were a feature of the research design.
Evaluation:	Sampling procedure was used in each case to create experimental and control groups. Interviews and questionnaires, administered about six months after the end of the series, focused mainly on parent behaviors in regard to feeding practices and permissiveness. Although some statistically significant differences on items were found within each study

TABLE 10.1 (continued)

favoring the experimental treatment, most comparisons revealed no statistically significant differences, while a few showed significant differences favoring control groups. When similar questionnaire and interview items across the three experiments are compared, on only one item (parents ask child's permission to use his things for new baby) is there agreement between at least two of the studies on statistically significant differences in the same direction. On all other items, either both show non-significant differences or disagreement is found (one reporting significant differences, another none).

(4) Television

Project: Operation Gap-Stop -- (A) physical care

Comments: Eight thirty-minute episodes of a soap opera entitled "Our Kind of World" were shown over an ETV station in Denver. The goals of the program and the content were determined after a survey was taken in low-cost public housing projects pointing up areas of ignorance. Key areas identified were health and hygiene, diet and food preparation, availability of social services, work and jobs, family budget, and social and family obligations. Three ways of attracting viewers were explored. A sample of 424 residents in the projects was divided into four groups: 64 were paid to watch the serial; 68 received flyers informing them of the programs; 193 learned of the programs by word of mouth from paid community leaders; 99 formed a control group who were not told about the television series by project personnel.

Evaluation: Effects were measured by interviewers who administered questionnaire items. Of the 424 low-income housing project residents initially surveyed, 82 (or 19%) viewed one or more programs; the mean number of programs watched was 4.8. However, it must be remembered that of the 82 viewers of one or more programs about 30 were paid $1/program. Of the control group, only 10% (or about ten viewers) watched, while 16-17% of those receiving flyers or word-of-mouth notice watched. Of those who viewed, most claimed that the series helped them with their problems, that it was believable, and that they would welcome additional

TABLE 10.1 (continued)

programs. A test of knowledge gained from the series, however, showed very slight increases in knowledge among viewers and only in some areas covered by the presentations. In fact, in 30% of the items, greater ignorance was shown by viewers than by non-viewers. Actual change of parent or child behavior was not measured. One interview item was a question as to whether the adult had at least thought of changing his way of living or practices in some area as a result of his exposure. Thirty-nine per cent of the viewers said that they had thought of changing some practice. The author in his summary and in the abstract of the ERIC document reported that 39% showed a predisposition to change their behavior (Mendelsohn et al., 1968).

(5) Counselling

Project: San Bernadino County Homemaking Counselling -- (A) physical care

Comments: An individual counselling program carried out by home visits emphasized nutrition, house cleaning and home management, clothing and serving, budgeting and home safety. The treatment involved 197 families in 2373 home visits lasting about three hours each visit for two years (1962-64). No financial aid was provided.

Home visitors had at least high school education and were required to own a car and to drive. Workers were part-time and average age was 43. They were carefully trained and then screened for teaching ability, experience with children and neat appearance. All were women. Salary was $1.50/hour. Homes were selected by referral from public health nurses, welfare and probation departments. Only mothers with children under six were eligible.

Evaluation: No control group existed. Only the closed cases were evaluated, thus eliminating 63 families. Judgment of improvement by home visitors was the major criterion for program evaluation. Thirty-three families were judged to have made excellent progress, 44 good and 17 failed. In addition, 24 of the closed cases had moved while 16 never completed training but were still closed. In addition, testimonial evidence from welfare, probation department and nursing personnel was included (Simpson and Cosand, 1967).

Parent Training Projects

On the basis of experimental research studies and of correlational studies of differences between homes of high-achieving and low-achieving children, many psychologists have become convinced that poor children are intellectually, or culturally or socially, disadvantaged. Most often the differences characteristic of children from low-income families (called "deficits") are attributed to the manner and time spent by low-income mothers in talking to, playing with and managing their children.

Parent training projects offer skill training to adults, primarily mothers -- either individually or in groups -- to improve the family's function of cognitive stimulation of children. Parent training is distinct from parent education, the subject of the preceding section. The techniques used in parent education strategies are intended mainly to inform; those used in parent training aim to impart new skills. The assumption of parent education is that once the lower-class parent knows what a proper diet is and how important good nutrition is for optimal child development, this new knowledge will automatically be translated into new, more desirable behaviors. Similarly, once the mother knows that elaborated language will enhance her child's cognitive development, she will then be able to translate this into new behaviors in talking to and playing with her child. Parent training does not make the assumption that new knowledge automatically leads to new behavior. Instead of just informing the parent, various parent training strategies systematically work toward developing skills and abilities. A different set of intervention techniques is required; lectures, discussion groups, printed material, television or counselling are inappropriate to many phases of a training program.

Classification and description of parent training. Parent training can take place entirely in the home, in a central location or combined home and center training. Since the major cost factors of a parent training program are determined by where the training takes place and by who does the training, we have chosen (1) locus and (2) training agent as the most logical bases of classification for this report. Other possible bases for classification of current projects have been considered but seem less desirable. Age of target child might have been used (infant, preschool, school age), but an inspection of current efforts shows no important differences in type of training for different age levels. While it might be possible to divide projects on the basis of the theoretical rationale which underlies the type of training offered (cognitive vs. affective orientation), the projects in operation look so much alike, with great emphasis placed on flexibility and individualization even in projects that seem more structured, that a cognitive-affective breakdown would be misleading.

Owing to the basic similarity of training intervention efforts, we can describe a typical project which is accurate for either home-based training projects or the home component of a mixed home-center training project.[17] Of course, not all projects are equally successful in fulfilling their training and implementation goals.

The parent trainer goes to the child's home after the parent has agreed to participate in the program. Usually it is only the child's mother who is trained but occasioanlly a regular caretaker, such as a grandmother, participates. The parent trainer is either a professional teacher or a specially trained paraprofessional who receives about four to six weeks of pre-service and continuing in-service training and supervision.

After initial screening, staff personnel (confusingly, for our purposes, called "parent educators") are introduced through lectures and discussions to child development theories which emphasize the importance of the mother in playing with and speaking to the child. Demonstrations of materials together with role-playing and actual practice with "demonstration" children then follow. Once the staff teacher fully understands the tasks or games, understands and demonstrates that she can apply her knowledge at the appropriate stage of development, attention is paid to showing her how to teach mothers of the children who are to be visited. Staff trainers stress the use of tact in relationships between mothers and project personnel. The need to be flexible in adapting the tasks to the needs and abilities of both mother and child are emphasized during the in-service training period. Finally, the staff learn about interviewing, record-keeping and test administration; these latter tasks are often the most unpopular.

Home visits last for an hour and typically occur once or twice a week. Some sort of counselling is provided; usually it is informal and not much more than companionship and advice. The parent trainer brings or constructs together with the mother toys, books and learning games. She demonstrates these materials and encourages the mother to learn by imitation; she talks to the child a great deal of the time and reinforces the mother when she is verbal and positively reinforcing the child.

The effects of parent training. The effects of parent training projects involve some developmental or cognitive test administered to the target child. Sometimes effect measures are administered to siblings as well to detect "vertical diffusion", a process where the mother applies what she learns about child stimulation to all her children. The effects on the mother and on family functioning are also noted and sometimes systematically measured. Usually mother and family effects are obtained by observation of the parent trainer; occasionally attitude tests are administered to mothers.

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[17] Projects that intervene on the child entirely through centers and hence work minimally if at all with families have been described in the chapters considering day care (ages 0-3), preschool (ages 3-6) or elementary school age (ages 6-10).

Most parent training has been closely connected with university research projects. Hence reports tend to embody better research designs and effect measures than are found in parent education efforts. All the projects in the table below have some form of "control" or "comparison" group, and use at least one standardized test of child cognition which shows a statistically significant gain for the group where the mother has been trained. Where a large number of tests and subtests are used, the finding of one or two statistically significant differences on the subtest at the .05 level is to be expected and will be ignored.[18]

Serious problems still remain in interpreting the reported results or effects of any of these parent training interventions and in making meaningful comparisons between the benefits of one project compared with the benefits of another.

1. The validity and reliability of effect measures on very young children have not been well established (see Chapter 5). The usefulness of the tests in measuring cognitive or non-cognitive development of low-income or minority-group children is even more questionable (for example, see Gordon's discussion of the administration of the Bayley Scales of Infant Development, Gordon, 1969, pp. 121-123). Locally prepared tests devised by project personnel often are not checked for reliability nor are they validated.

2. All demonstration projects have used volunteers for experimental, control and contrast treatment groups. The generalizability of findings from volunteers to the true target population should never be assumed. Exactly how biasing is the use of volunteers cannot be determined a priori. It would seem that the more demand is made on parents to actively participate in the teaching of their child (as in the Gordon and Gray models), the more the effects depend on having a group of willing subjects or volunteers. In the Schaefer model, which relies less on the parent, the use of volunteers in a demonstration is apt to be less biasing. Still, as long as control and experimental groups are both volunteers, treatment intervention effects may be meaningful provided that threats to internal validity are properly handled and provided that limitations of generalizability are not forgotten.

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[18] For another recent review of parent training as well as of parent education projects, see Lazar and Chapman, 1972. This is an excellent study, which is more comprehensive (covering 1[illegible]4 projects) because it includes projects with only preliminary data or with no reported evidence of effect including proposed projects. It also reports results of many studies which do not meet the above criteria for inclusion in this paper, i.e., use of valid control and comparison group and interpretable statistically significant gains. Such studies will be included in the bibliography of this report but not in the text. There are three projects in that review (#3, #24, #37, Appendix A) which could not be located and hence could not be judged for inclusion.

3. Certain threats to internal validity are not controlled for in most of the research designs, such as:

a. contamination of treatment variables (shown to exist in several DARCEE projects where it is called horizontal diffusion [Gilmer, 1969]).

b. testing biases occasioned by repeated measurements on experimental but not control children (they also occur in cases where experimental children become more comfortable with testing situations).

c. non-equivalence of experimental control and contrast groups at the start of treatment. Although some kind of stratified random sampling procedure is often used to assign subjects to treatment and control groups, we do not know enough about the effects of extraneous variables to stratify intelligently. Thus, in one DARCEE study reported below (Gilmer et al., 1970), the families were equivalent on race, educational attainment and income, but considerable differences existed on non-stratified factors of father absence, per cent on public assistance and number of children. Did the fact that in one group of 20 there was only one family on public assistance but in another group of 20 seven families on public assistance influence the results? In the Weikart report, children were comparable on IQ, number of children in family, number on welfare and "cultural deprivation index". But did the fact that the experimental group was less than 50% male and 75% black compared with a control group 72% male and 57% black influence the reported results? Karnes, Studley and Wright (1966) give no data on comparability aside from initial matching on IQ and sex. At this stage, questions of comparability cannot be answered definitely since we lack the knowledge about the importance of control variables. They do suggest caution in lending too much credence to reported superiority of experimental groups after treatment.

d. changes in nature of treatments over time. In several projects, tables report group results obtained from periods of two, three, or more years. Over the course of time these projects have been modified, even significantly altered.

4. Dropouts from the original sample both before and during treatment are not dealt with in a satisfactory way. Exactly how to handle subject attrition is a difficult but important issue, which vitally affects both the practical and statistical significance of the findings. Yet even where the attrition rate is reported, it is then ignored in the analysis of the data. Either the number of subjects present for a particular test is used (with no attempt to account for missing data) or the number of subjects which appears is changed so that membership in the treatment group depends on the investigator's opinion as to the intensity of treatment experienced by the subject. For example, Gordon decided not to include

in the treatment group those children whose parents had missed more than one-half of the sessions, even though he did administer the post-tests to them. This latter manipulation of data is necessarily post hoc and appropriate only to exploratory studies. In the footnotes to the tables, vital details concerning the magnitude of differences as well as the changing number of subjects in various groups will be noted. In many cases where statistical significance is attained, it may only be because less successful subjects drop out, making the treatment gains seem larger.

5. Demonstration projects by nature are closely controlled and supervised. Should the demonstration -- judged successful on the basis of reported results -- be exported as the model for a widely-scattered operational program, close control and supervision by the project originators would probably be attenuated. Whether effects would be maintained under these circumstances is open to serious question.

6. Most measures of effects on mothers are observations of or ratings by project personnel, who could be suspected of a bias to report progress in order to cast a favorable light on their efforts. Questionnaires administered to mothers by project personnel would tend to elicit comments favorable no matter what the true feelings of the mothers might be; the more so if local community members were used as parent trainers and interviewers.

Conclusion. Owing to the problems of research design in parent training demonstration projects, it is difficult to be confident in making generalizations from the reported evidence. There are certain patterns in the results which may be real or may just be artifacts of common error made by a number of the investigators. The conclusions below are offered tentatively:

1. The parent training projects selected as exemplary show moderate to fairly high (1/2 to 1 standard deviation) IQ, language development or achievement gains during the period of actual intervention.

2. Where follow-up has been done, the gains are reduced but not entirely lost one or more years after intervention has ceased. The more the parent has been involved the more long lasting the effect.

3. Even higher gains are reported for intervention treatments, where non-standardized local tests measure the specific kinds of cognitive learning or language development taught.

4. Very little success has been obtained in the use of non-cognitive tests for children. Questionnaires and interviews show favorable attitudes on the part of mothers, but the conditions under which they have been administered make the reality of these favorable effects suspect.

5. Where both the mother and child are involved in training in both the home and a center, greater and more long lasting gains in IQ are found (see results of Syracuse Children's Center, Chapter 9).

6. As far as the criterion tests of cognition demonstrate, it seems to make little or no difference whether the parent trainer is a professional teacher, professional social worker or trained paraprofessional.

7. No curriculum used by parent training projects seems significantly better than another.

8. Like parent education, parent training means working primarily with mothers. Fathers and other family members are rarely involved (Lazar and Chapman, 1972, p. 122).

We shall present the data on parent training projects using the following code for reporting effects in the table. Detailed results where we have them will be found in footnotes. Depending on how the data are reported in the research report, we will use one of the following symbols:

(gain 6.7)	A number will be noted which represents either the mean gain score for one group (pre- post-test) or the main difference on a post-test between experimental and control groups where such a gain score or difference is statistically significant at the .05 level or better and where the number is meaningful (such as in an IQ test where the standard deviation is known).
(positive) or (negative)	Where a simple number is not meaningful because a local non-standardized test is reported with several treatment variables and/or comparison-control groups, or because scores have been adjusted, but where a "t" or "F" test shows a significant difference favoring the experimental group (+) or favoring the control-comparison group (-).
(0)	This means no statistically significant differences were found between the trained and untrained group.
(?)	A criterion measure is reported as being used but no results are given, or no analysis was carried out using the data, or only unanalyzed anecdotal data is presented.

TABLE 10.2

Exemplary Projects in Parent Training

Delivery Systems:	Family Function Goals;
(1) Home based - professional trainer	(A) Physical care
(2) Home based - non-professional trainer	(B) Cognitive stimulation and social training
(3) Home and center based	(C) Emotional sustenance

(1) Home based - professional trainer

Project: Schaefer, E. (1969) and Schaefer, E., and Aaronson, M. (1972) -- (B) cognitive stimulation.

Comment: Mothers are not required to be present during infant stimulation although they are encouraged to be there; college graduates used; visit 1 hour/day, 5 days/week, 21 months.

Evaluation: Effects on

Target child - measured by	Peabody Picture Vocabulary Test	(gain 10.88)[19,23]
	Bayley Infant Development Scales	(0)
	Stanford-Binet IQ	(gain 17)[20,22]
	Johns Hopkins Perceptual Test	(positive)[21]
	Aaronson and Schaefer Preposition Test	(0)
	Schaefer and Aaronson Infant Behavior Inventory	(?)
	Bayley Behavior Profile	(?)
Mother - measured by	Schaefer, Bell and Bayley Maternal Behavior Research Instrument	(?)

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19. At 36 months, experimental group (X) with 28 members compared with control group (C) with 30 members. Visits were made with no training of mother or child (all numbers given are mean scores). X=87.11 c.f. C=76.23, $p < .01$ (IQ points)

20. Same conditions as fn. 19. X=106 c.f. C=89, $p < .01$ (IQ points)

21. Same conditions as fn. 19. X=11.61 c.f. C=6.60, $p < .01$ (IQ points)

22. "The IQ score of the control group increased following intervention so that it was no longer significantly different from that of the experimental group either two or three years after intervention. There is reason to believe that the mothers in the control group may have been influenced to promote their children's development more than they ordinarily would have by their frequent observations of testing and by noting in the project's storeroom the toys and equipment being used with the experimental group." (Lazar and Chapman, 1972)

23. In addition to those undergoing experimental treatment (X) (where 33 subjects took both tests), a comparison group of 9 (C_1) received visits but no training while a control group of 11 (C_2) received neither visits nor training. X gained 17.0 IQ points, C_1 gained 1.0 IQ points, and C_2 gained 2.0 IQ points. The differences between X gains and C_1 and C_2 gains were statistically significant, $p < .01$.

TABLE 10.2 (continued)

Project: Levenstein (1971a, 1971b) and Wargo, M.J., et al. (1971) -- (B) cognitive stimulation.

Comment: Effects will be reported in two columns. The first column represents results of the first year where only professionals (social workers) were used. The second column reports effects of the second and third years when only non-professionals (middle-class volunteers and lower-class paid paraprofessionals) were employed.

Evaluation: Effects on

			I	II
Target child	- measured by	Cattell Infant Intelligence Test or Stanford-Binet	(gain 15-16)[23,26]	(positive)[27]
		Peabody Picture Vocabulary Test - IQ	(gain 16.2)[24,26]	(positive)[28]
Mother	- measured by	Questionnaire	(positive)[25]	(0)[29]

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24. The same conditions referred to in fn. 23 prevailed, but scores for only 29 in the experimental group are reported. X gained 12.2 points; C_1 lost 4.0 points; C_2 gained 4.7 points. Thus the differenc[illegible]en X and C_1 gains, 16.2 points, is statistically significant, p [illegible]1; but the difference between X and C_2 gains is not.

25. The questionnaire asked mothers whether they considered the program helpful to children. The difference between mothers of treated children and untreated children was statistically significant in a chi-square analysis of the responses, $p < .01$. Lazar and Chapman (1972) report that Levenstein "found no significant changes in the mothers' IQ as a result of the project. Although there was some indication of mothers' positive attitudes toward the project, no significant differences were found in the kinds of major life events and in the incident of mothers' employment." (p. 15)

26. A follow-up was undertaken 30 months after the original pre-test was administered. Seventeen children who had had no further training after the first year treatment showed a retained mean IQ gain of 12.7 points on the Stanford-Binet and a retained mean IQ gain of 14.1 on the PPVT. The control groups showed an IQ gain of 2.3 points on the Stanford-Binet but a gain of 12.0 points on the PPVT.

27. Some of the original experimental children from the first year continued during the second year of the program. By the time of the post-test their number was 8; they are called X_1. Nineteen new children received treatment during the second year and the third year; they are called X_2.

(footnote continued on following page)

TABLE 10.2 (continued)

Project: Weikart and Lambie (1968) -- (B) cognitive stimulation

Comments: A 12-week pilot project used professional elementary school teachers; community aides helped care for other children in the home during teaching.

Evaluation: Effects on

Target child - measured by	Stanford-Binet IQ	(gain 8.2)[30]
	Peabody Picture Vocabulary Test	(0)
Mother - measured by	Questionnaire	(positive)[31]
	Weikart Educational Attitude Test	(?)
	Wolfe and Dave, Cognitive Home Environment Scale	(?)

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27. (cont) At the beginning of the third year, an additional group of 30 children were trained, they are called X_3. Finally, a control group of 12 children underwent no training; they are called C. On the Stanford-Binet IQ, X_1 showed a total gain of 18.1 points from their first pre-test. X_2 gained 11.7 points after one year of treatment and a total gain of 17.2 points after their second year. X_3 showed a gain of 15.8 points after one year of treatment. C showed a gain of 8 points after one year of no treatment.

28. The same conditions referred to in footnote 26 prevailed. The number of subjects is the same for the PPVT as it was for the Stanford-Binet. X_1 showed a total gain of 17.6 points; X_2 a gain of 5.3 after one year of treatment and a total gain of 17.6 after two years; X_3 showed a gain of 8.6 after one year; C lost 6.2 PPVT IQ points after one year of no treatment. These results from the second and third years where only non-professionals were used led the investigator to conclude that in her project, paraprofessionals were equally effective as professional social workers.

29. The questionnaire was the same as referred to in footnote 25.

30. Experimental group (X) with 35 members compared with control group (C) with 29 members. X gained 8.2 points compared with C which gained 0.9 points, $p < .01$.

31. As a measure of morale of both staff and mothers, 92% of possible home visits were completed; of those not completed, less than 3% were due to the fact that the mother was not at home at the appointed time. Mothers actively participated in 95.7% of the home visits. The questionnaire administered by the home visitor showed that 91.5% were favorable to the project.

TABLE 10.2 (continued)

Project:	Karnes, Studley and Wright (1966) -- (B) cognitive stimulation
Comments:	Mothers were paid $1.50 an hour for their participation. Although professional teachers trained the mothers, attempts were made to involve parents somewhat in the content of training, in planning the project and in creating project materials. Some home visits were made to all mothers.
Evaluation:	Effects on

Target child - measured by	Stanford-Binet IQ	(gain 7.46)[32]
	Illinois Test of Psycholinguistic Abilities	(0)[33]

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[32] The treatment lasted only 4 months. The treatment group (X) numbered 13; the control group (C) also numbered 13. The gain scores (pre-post) for the two groups are: X gained 7.46 points while C gained 0.70 points. The difference between mean gain scores of the two groups was statistically significant, $p < .05$. Another interesting result was less variability in the post-test scores of group X.

[33] Although no significant difference was found on the total ITPA scores, statistically significant differences in three of nine sub-scores favoring X were found while statistically significant differences favoring C were found in certain sub-tests.

Note: A very similar intervention reported by Karnes et al. (1969b) produced IQ gains of 7 points on the Stanford-Binet and no significant differences on the ITPA.

TABLE 10.2 (continued)

(2) Home based - non-professional trainer

Project: Gordon, I. (1969) -- (B) cognitive stimulation and (C) emotional sustenance.

Evaluation: Effects on

Target child	- measured by [34]	Griffiths Mental Development Scales - IQ age 1 year	(gain 3.92)[35]
		Bayley Infant Development Scales - IQ age 2 years	(0)
		Test of Performance on Series	(positive) [36]
		Race Awareness Test	(0)
Mother/ Family	- measured by	Markel Voice and Language Assessment	(0)
		Estimate of Mother Expectancy	(?)
		HISM - revision of Gordon's How I See Myself	(0)
		SRI - revision of Rotter's Social Reaction Inventory	(positive) [37]
		PEWR - Gordon's Parent Educator Weekly Report	(0)
		FOR - Gordon's Final Observation Report	(0)[38]

Note: See also Levenstein (1971a, 1971b, p. 39), above, for 2nd and 3rd year results.

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[34] Various treatment, comparison and control groups were created in the Gordon project. Owing to different definitions of treatment and control, to subject attrition and to tests being given to only some of the groups, the numbers in the "experimental" and "control" groups are hardly ever the same in more than one table. We shall report the number and groupings that are given by Gordon for each effect measure.

[35] X (109 members) 111.10 compared with C (84 members) 107.18.

[36] Various comparisons are made using signs test. The experimental group is highest and control lowest. Proportions of successes on series tests for matched groups at 12 and 24 months show that X (22 members): C (14 members) successes at 12 months is 14:2, at 24 months is 17:4.

[37] X (30 members) lost .77 points while C (26 members) lost 0.20 points; a greater loss indicates more internal control. This result is significant statistically at $p < .05$.

[38] After analyzing data from both these observation reports, Gordon concluded: "In general, there is no clearcut pattern of relationship between demographic and observed home visit variables with the test performance of infants." (Gordon, 1969, p. 181)

TABLE 10.2 (continued)

(3) Home and center based

Project: Gilmer et al. (1970) -- (B) cognitive stimulation

See also Perry Preschool Project (Chapter 8); Syracuse Children's Center (Chapter 9); Early Training Project (Chapter 8); Appalachian Home-Oriented Preschool Program (Chapter 8).

Comments: Three experimental treatment groups were created. One was a home visitor only group (HV) corresponding therefore to the second type of delivery system. Children in this group received only one year of treatment. Of the two others, one was a preschool only group (CU) and the other was a combined home visitor and center based program where the mother trained both at home and at the center (MI, for maximum impact). In the two latter groups treatment lasted for two years. Within each group tests were administered to the target child (t) and to a younger sibling (s) to test for "vertical diffusion" from the mother to the younger sibling. There were also three control groups, FW I (Front Wave I), FW II (Front Wave II) and YS (Younger Sibling of an untreated parent).

Evaluation: Effects on

Target child	- measured by	Stanford-Binet IQ	(positive) [39]
		Peabody Picture Vocabulary Test - IQ	(0)
Younger sibling	- measured by	Stanford-Binet IQ	(positive) [40]
		PPVT	(0) [41]
		DARCEE Basic Concept Test	(positive) [42]
Mother	- measured by	Level of aspiration	(?)
		Ability to plan, organize and implement a teaching strategy	(?)
		Self-concept	(?)
		Home management skills	(?)
		Occupation change	(?)
		Level of social contacts (church, school, politics)	(?)
		Level of education	(?)

(footnotes on following page)

TABLE 10.2 (continued)

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39. Considering first the three experimental groups only -- HV, CU and MI -- after one year of treatment of the target child, results showed the home based only group (HV_t) statistically significantly worse than either the center based only (CU_t) or the combined home and center based group (MI_t). After the second year, the same results were found. In fact, the scores of HV_t were not different from control groups. The investigators believe that the poor showing "appeared to reflect a simple finding of too little, too late". These children were not comparable to the other experimental groups initially a year older and only a year away from school, and their treatment was much less intensive. However, a positive was entered since the home and center based group was superior to the HV and control groups. All differences significant, $p < .01$.

40. When Binet IQ scores of younger siblings in each of the experimental groups (HV_s, CU_s, MI_s) and in the control group of untreated younger siblings (YS) are examined, the mean scores of younger siblings in the two groups where mothers had been trained as well as children (HV_s and MI_s) were statistically significantly superior to the mean scores of younger siblings in groups where mothers had not been trained (CU_s and YS). Mean scores are: HV=94.4 and MI_s=91.68, compared with mean scores of CU_s=85.07 and YS=81.24. All differences significant, $p < .01$.

41. Initial results reported showed no significant differences between experimental and control groups. Later on the test was abandoned.

42. The only data are on the younger siblings of groups where the mother was trained, compared with younger siblings where the mother was not trained. The two groups having parent training were superior to the groups without parent training on all three subtests of the Basic Concept Test, $p < .01$.

TABLE 10.2 (continued)

Project: School and Home Program, Flint, Michigan, Wargo et al. (1971), pp. 265-268 -- (B) cognitive stimulation

Comments: A mother-training program for cognitive development (achievement in reading) in Flint, Michigan, undertaken during 1961-62. Both professional teachers and volunteer mothers acted as home visitors. Parents were trained at home and at the center (school), while children continued to receive center (school) instruction. Training was aimed at motivating mothers to (1) motivate their children in reading and learning, and (2) provide a conducive atmosphere for study and school success (rest, a quiet period in the home, food). Training also consisted of techniques to facilitate children's studying, reading words and making reading booklets. Although the program has been expanded to other elementary schools in the Flint district, no data is available. This project formed the basis for one of the Follow-Through model programs.

Evaluation: Effects on[43]

Target child - measured by Gage Revised Reading Tests:

2nd grade mean gains vocabulary	(positive)[44]
2nd grade mean gains comprehension	(?)[45]
2nd grade mean gains overall	(positive)[46]
5th grade mean gains vocabulary	(positive)[47]
5th grade mean gains comprehension	(positive)[48]
5th grade mean gains overall	(?)[49]

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[43] No randomized controls were established. Instead a "control" group of "socioeconomic backgrounds similar to the experimental group" was used for comparison, thus creating a possible confounding of school and treatment effects. The fact and extent of parents' participation was voluntary.

[44] Experimental B (n=82) gained 5.5 months; experimental C (n=71) gained 5.8 months. Control A (n=66) gained 3.6 months. Using 3 scores, p=.01.

[45] B (n=82) gained 4.9 months; C (n=71) gained 7.1 months. A (n=68 - c.f. footnote 42) gained 4.1 months. B > A not significant. C > A, D < .01.

[46] B (n=82) gained 5.1 months; C (n=71) gained 6.4 months; A (n=63 - c.f. footnote 42) gained 3.9 months. B > A, p=.05; C > A, p=.01.

[47] B (n=70) gained 6.4 months; C (n=54) gained 6.1 months. A (n=63) gained 1.4 months. B > A, p=.01; C > A, p=.01.

[48] B (n=70) gained 1.3 months; C (n=54) gained 5.7 months; A (n=63) gained 1.8 months. B < A, NS; C > A, p=.05.

[49] B (n=70) gained 3.7 months; C (n=53) gained 6.0 months; A (n=60) gained 1.7 months. B>A, NS; C>A, p=.01.

TABLE 10.2 (continued)

Project: Mother's Training Program, Karnes, Teska, Hudgins and Badger (1970) -- (B) cognitive stimulation.

Comments: Two-year program -- 7 months first year, 8 months second year. Mothers trained at home and at centers in groups. Some mother-centered activities provided in discussion groups about birth control, race, community involvement. Mostly professional training. Mothers paid \$1.50/hour for babysitting; transportation provided.

Evaluation: Effects on[50]

Target child - measured by	Stanford-Binet IQ	(gain 15.7)[51]
	ITPA	(positive)[52]

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50. Of 20 mother-child dyads who began the program, five dropped out before the end of the fifteenth month. No data presented concerning dropouts. No randomized control group. Instead, a "matched control" was post-tested for the first time at the school site by a professional tester. Matching was almost exact on race, sex and age and similar on factors of number of children in family, mother's region of birth, education, AFDC and employment. On father presence, 11 experimentals but only 7 controls had fathers living at home. A sibling control comparison was attempted with six of the experimental children in order to show that siblings of experimental children at a comparable age had much lower IQ scores. The reasoning advanced was that this would argue against significant mother and family effects on children before treatment.

51. Experimental X (n=15) mean IQ=106.3. Of "control" (n=15) mean IQ=90.6. $\overline{X} - \overline{C} = 15.7$, $p < .0005$.

52. X (n=15) - .8 months (language age minus chronological age)
C (n=15) - 5.9 months (language age minus chronological age)
$\overline{X} - \overline{C} = 5.1$, $p < .025$

The difference might have been greater except for floor effects (7 in the control but only 3 in the experimental scored the minimum).

Family Casework (Social Service Referral)

Family social work projects today are carried out by both private and government agencies. Among private agencies, the most prominent types are the family service and child welfare organizations. Among the public agencies at the Federal level are Social and Rehabilitation Services, the Veterans Administration and the military; at the state and especially municipal levels, government-sponsored casework is carried out by public assistance (welfare) agencies. Family social workers are also employed by hospitals, clinics, schools and courts. (For a comprehensive listing of public and private intervention organizations concerned with the family, see Brown [1964]).

Clark W. Blackburn (1965) identifies five functions of agencies concerned with family social work: (1) providing helping services; (2) engaging in educational activities; (3) providing opportunities for professional education of social workers; (4) encouraging research in social work; and (5) improving the social environment. The first and second of these functions involve direct action on families. Having discussed educational activities under parent education, we shall here concentrate on the first mentioned function, providing helping services. Helping through therapy and counselling (in which family social workers often engage) will be treated in the next section. The other important type of helping services identified by Blackburn consist of enabling the family to obtain economic aid and social resources. The caseworker "plugs" the family into available and appropriate economic and social resources provided by the community. These include schools, housing, training programs, employment opportunities, health care, homemaker services, surplus food and welfare and disability-unemployment income supports. By providing these referral services, the family caseworker facilitates not only the physical care function of families in their child development role, but also their socializing and emotional sustenance function as well.[53] What distinguishes family social work from other kinds of social casework is that the family is the major target of intervention. The major goal is concerned with strengthening family functions that have been disturbed and whose disturbance hampers optimal child development.

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[53] See Hartman (1971) for an excellent discussion of methods of helping in social casework theory and practice. The majority position considers personal growth through therapy as the important concern of social casework; the minority position contends that resource delivery referral is the important goal of casework. As with distinctions between parent education and parent training, we see no point in arguing that certain activities are or are not truly "casework". The goals and activities of therapy and casework can be logically and practically distinguished as they were in the introductory section. Should anyone still want to consider a project "casework" which uses therapy to remedy problems of resource delivery, he can find references to the effects of such projects in the section on family therapy. For the sake of logical clarity we shall only discuss resource delivery projects in the social casework section. However, it should be immediately noted that most caseworkers in voluntary agencies, and especially the more prestigious family caseworkers possessing the M.S.W. degree, tend to emphasize therapy, not resource facilitating, functions. See Borenzweig (1971), Meyer (1970), Rapoport (1969). Critics of the current family casework "establishment" have also pointed out the lack of attention paid to low-income and especially to "multi-problem" families by family counselors since the Depression (Cloward and Epstein, 1965; Beck, 1962).

Measuring family progress. Although modern casework began in 1898,[54] until recently few attempts were made to measure systematically the effects of family casework or to compare the efficiency of various approaches in family casework. As Ellen Winston, former Commissioner of Welfare, wrote:

> There have really been only a few small studies that included controls in their design which have dealt intensively and objectively with the results of casework as practiced by persons trained in schools of social work. (Winston, 1968, p. 28)

During the 1920's, casework theory borrowed both concepts and techniques from psychoanalysis and with it the case study and anecdotal style of reporting treatment effects (McDonald, 1960). This practice has also hampered the progress of research and evaluation in casework. A pioneering attempt to measure effects of casework was the Community Service Society's Movement Scale (Kogan et al., 1953). For a brief period the Movement Scale achieved a certain degree of influence among research oriented caseworkers, but it has now faded into obscurity owing to problems of validity and interpretation (Blenkner, 1962; Shyne, 1963).

In the 1950's, when social workers intensively explored juvenile delinquency, effects of casework were sometimes measured by incidence of delinquency. However, reported delinquency is a very rough and unsatisfactory measure of family malfunctioning. It is greatly susceptible to fluctuations having nothing to do with family functioning or juvenile behavior, but rather with changes in laws and efficiency of enforcing and reporting crimes. Another demographic measure, movement toward employment of the family head, has been used in two studies reported here (Wiltse, 1954; Geismar et al., 1970). Again this measure depends upon external circumstances such as job opportunity over which the caseworker has little control.

The most validated and reliable instrument measuring the effects of family casework intervention is the St. Paul Scale of Family Functioning, a comprehensive tool used in several research studies employing control groups. The operational definition of family functioning is given in relation to nine categories which include child care and training, home and household practices, economic practices, health practices, social activities, family relationships, use of community resources and relationship to the social worker.

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[54] Modern casework is considered to have begun in 1898 with the founding of the Charity Organization Society of New York summer training (see Towle, 1945).

The effects of family casework. This brief review of the history of measurement of family casework makes clear that research necessarily involving measurement of effects has not been well developed (see Chapter 5). A few recent systematic research efforts do exist in the literature. Unfortunately for our purposes, most have been conducted on populations whose characteristics do not directly illuminate our interest in family changes which affect child development, since they have been done on the aging, mental patients or high school age boys and girls (Miller, 1962; Blenkner, Jahn and Wasser, 1964; Meyer et al., 1965; Vinter and Sarri, 1965). Among interventions which might give insight about the family functioning on child development, most are reports of casework projects and programs where effects are not measured and control group designs are not employed. We feel there is now way to discuss such efforts which would be of use to program planners and evaluators.

One controlled study important for the negative implications of its findings is the Chemung County evaluation of casework services to dependent multi-problem families (Brown, 1968). Fifty randomly selected multi-problem families received intensive social casework from two professional social workers holding a Master's degree. Fifty received only casual attention from normal public assistance personnel. The St. Paul Scale of Family Functioning was used to measure family improvement; an additional check on validity was the use of the Kogan-Hunt CSS Movement Scale. After 31 months of treatment the difference favoring the treatment group was small, not statistically significant, and largely attributable to one family which had dramatically improved. The results of the study caused consternation in Washington (see Steiner, 1971) and among leaders in the social work profession. Clearly one small study could not provide definitive evidence on whether casework is or is not effective. However, the careful and relevant conception, methodology and execution of the Chemung study made easy assumptions about the effectiveness of professional family caseworkers in public assistance agencies untenable. As Wayne Vasey, Dean of the School of Social Work, Washington University, observed:

> Over the years, social welfare policy has been committed to the employment of professional social work staff in the administration of public assistance at all levels of government, and to provide conditions which would make it possible for the professionals to function. One of these conditions has been the provision of supplementary resources; another, the reduction of caseloads. So this study provided for reduced caseloads, and the best possible access to community resources for the degree-holding social workers assigned to the program While the social work profession has never urged such a program on the country as the ultimate means of eliminating dependency, claims have been made, tacitly and explicitly, that such measures would be effective in helping families toward the attainment of a more adequate level of functioning....Therefore, it must be acknowledged that a jarring impact must result from (this) report.... (Brown, 1968, pp. 32-33)

In the table below we shall summarize the only examples found of family casework intervention among lower-class families (with implications for child development) which measure effects, which embody some sort of control and which show some favorable results after treatment. Preceding the table will be a summary by Geismar of the major implications of family casework research based on several additional studies.

From the outcomes of the N.I.P. and FLIP studies discussed in the following table, and from a review of seven other controlled studies with measured outcome (Behling, 1961; Bell and Wilder, 1969; Brown, 1968; Kuhl, 1969; Mullen et al., 1970; Schwartz and Sample, 1967; Wilson, 1967), Geismar concludes:

> 1. There is no basis for declaring casework intervention either effective or ineffective without examining the total context within which the service is rendered....Most of the action-research projects had as their goals helping lower-class families, yet none of the service programs provided adequate economic aid....When deficit needs of families are not met, (then) the provision of other forms of service may not be an effective investment.
>
> 2. The greater the shortcomings in existing community services, the greater the need to make a new program of intervention multi-service that copes directly with the salient needs that have been identified.
>
> 3. A consideration of the studies that identified components of change shows that intervention in instrumental areas of social functioning appears more effective than service in expressive areas....Advice, guidance and support in child rearing, health care, homemaking, and house hunting had a sharper impact on family living than interpersonal counseling or treatment of behavior problems....The relative effectiveness of certain types of instrumental intervention suggests that various kinds of specialists in such areas as child care, public health, home economics and vocational counseling have a part to play in family service. The experience derived from the action-research projects suggests that persons with undergraduate training are able to perform effectively, particularly when they are supervised by a trained and experienced social worker.
>
> 4. The preventive approach...appears to be more than a hope or vision. Early intervention does make a measurable difference but that difference was found to be significant in only a few specified areas....Although the research design did not give special emphasis to service in the intrapersonal and interpersonal areas, some types of instrumental intervention fell short of desirable goals because of the absence of means to effect any fundamental change in unemployment, lack of material resources and poor housing of many families.
>
> (Geismar, 1971b)

TABLE 10.3

Family Casework Projects

1.	Project:	Jobs for fathers of ADC families. Wiltse, K. (1954)
	Comments:	The intervention consisted of intensive casework applied by an experienced professional social worker. Although no organizing schema is used to describe the actual steps taken, a lengthy and detailed report of actions taken is provided.
	Evaluation:	Quasi-experimental control is provided by reporting the past histories (up to the time of casework intervention) of the 27 ADC families. In each case, the father had been unable to work for long periods of time; the cases were considered difficult and frustrating by past social workers. After three months, one-half of the fathers were either employed, actively seeking work or in a retraining program.
2.	Project:	New Haven Neighborhood Improvement Project. Geismar and Krisberg (1967)
	Comments:	Intensive family casework on an outreach basis was the main form of intervention explored in this project, although community action was also undertaken in the neighborhood. Both professional and non-professional workers were used.
	Evaluation:	The St. Paul Scale was used to measure the progress of low-income housing project families who received traditional family-centered social casework. The effects measured by the instrument showed greater positive movement in family functioning (family relations, child rearing, social activities, economic and health practices, etc.) for the 30 experimental families treated during 18 months than in a non-treatment control group. A further analysis of components of family functioning showed that the overall improvement in functioning took place in 87% of the experimental families. Greatest progress was made in the categories of health practices, relationship to social worker, use of community resources; less movement was shown in family relationships; least movement was found in home and household practices, which were rated as most adequate at the beginning of the treatment. A serious flaw, however, was that data showing progress was collected by NIP project personnel who knew the identity of experimental and control groups.

TABLE 10.3 (continued)

3. Project: Family Life Improvement Program, Newark, N.J.
Geismar, Gerhart and Lagay (1970); Geismar (1971b)

Comments: A variation of family casework called "opportunity-centered casework" was employed which emphasized client advocacy with community agencies as well as the traditional helping services, information and counselling in comprehensive areas of family functioning. Only non-professional but college educated workers were used; they lacked close ties with and knowledge of the social service establishment of Newark. The target population consisted of all young mothers with newborn first children; random sampling from this population was used and two groups, one experimental-treatment and one control, were created. Given the socioeconomic composition of Newark, almost all families in both groups were low-income. The intervention lasted four years.

Evaluation: Effects were measured using the St. Paul Scale and demographic information. On the St. Paul Scale, the experimental group was found to be functioning statistically significantly better in three of eight categories of family functioning (child care, health and household practices), with trends favoring the experimental group in four other categories. Only in the use of community resources was the control group non-significantly better. (The investigator notes that owing to far greater experience in dealing with the Newark social service establishment, the experimental group showed more negative attitude and behavior; to know them in this case was not to love them.) On demographic data, results favored the experimental group on the following comparisons: number of children born (1.88 for experimental vs. 1.96 for control); number of children born out of wedlock (1.79 vs. 2.04); movement toward self-support among families originally self-supporting (88.2 to 90.9% among experimentals compared with 92.3 to 91.5% for controls); gain in self-support among families not self-supporting at start of intervention (30.1% gain for experimentals c.f. 25.4% for controls); movement toward self-support among mothers unmarried at start of intervention (from 9.5% to 30.2% for experimentals c.f. from 5.5% to 25.5% for controls). In the two categories of broken marriages and new marriages among unwed mothers the control group showed greater movement (10% broken marriages among experimentals c.f. 8.4% among controls, and 11.3% new marriages among experimentals compared with 18.2% among controls).

Parent Therapy Projects

Parent therapy projects offer treatment to adults either individually or in groups, seeking to change affective behaviors of adult family members and in turn influence optimal child development. Two categories of therapy projects will be considered: psychoanalytically-oriented family therapy, and behavior modification parent therapy. Until recently, virtually all the parent and family therapy conducted in the United States has been strongly influenced by psychoanalytic theory and practice. Behavior therapy in family intervention projects is still in its infancy and will be discussed briefly in the second part of this section.

Psychoanalytically-influenced family therapy and counselling. Ackerman, the leading practitioner and theorist of psychotherapeutic family therapy, considers it a

> ...special method of treatment of emotional disorders. It is a procedure that makes use of a true group, a primary group; the sphere of intervention is not the isolated individual patient but rather the family viewed as an organismic whole....It deals with the relations between the psycho-social functions of the family unit and the emotional destiny of its members. (Ackerman et al., 1967, p. 4)

Family therapy is undertaken in a diversity of settings by psychologists, psychiatrists, social workers, guidance counselors and family caseworkers. Trained paraprofessionals have rarely been used. A useful distinction can be made between individual and group approaches to family therapy. The individual approach is characterized by a 1:1 relationship between therapist and family member; counselling done by guidance and social workers, and individual psychotherapy and psychoanalysis are examples. The group approach includes those techniques where more than one family member is treated by the therapist. Various names are given to different group practices depending largely on the theoretical beliefs and ideology of the therapist, such as "group therapy", "family psychotherapy", "familial therapy", "conjoint family therapy", "family group therapy" and "family group counselling". (For a review of the major schools of family therapy, see Hayley, 1962, and Ackerman, 1970.)

The trouble is that although proponents of family therapy give detailed descriptions of the theory and practice of their favored system, these independent treatment variables are of little use to evaluators or program planners since they are not systematically related in controlled research designs to measured effects of treatment. Following the tradition of individual psychoanalysis, effects of treatment are reported anecdotally, rather than being measured. No control or contrast groups allow one to separate the effects of treatment from extraneous factors. The issue of the effectiveness of psychotherapy is subject to continuing controversy among psychologists and psychiatrists. Eysenck (1952), for example, reviewed

24 studies of over 8,000 patients involved in psychotherapy, and found that their "recovery" rate was less than that of a group of untreated patients who experienced spontaneous remission. (Eysenck's attack on psychotherapy has been criticized on methodological grounds by Rosenzweig [1954] and Kiesler [19[illegible]0].) A recent, unsympathetic reviewer of the literature of psychotherapy observed: "No form of therapy is clearly and demonstrably more effective than time and experience." (Tyler, 1961)

A more sympathetic and comprehensive review of research in psychoanalysis, which encompassed over 2,500 references limited mostly to individual therapy with adult psychoneurotics, concluded that:

> ...research in psychotherapy has failed to make a deep impact on practice and technique. Presumably this is due to the fact that the results of most investigations have not had practical significance. Reasons for this include the relatively short period of time systematic research has been focused on the problems of psychotherapy, deficiencies in techniques available to the researcher, and practical difficulties in designing and carrying out adequately controlled studies. (Strupp and Bergin, 1969)

Goldstein (1969) extracted from this evidence a trend encouraging the use of non-professional psychotherapists similar to clients in social class, interests and values and orientation to interpersonal relations. Among such non-professionals he identifies parents, aides, convicts, housewives, auxiliary counselors, and foster grandparents. (See also Truax and Carkhuff, 1967.) The recent literature on family therapy in its various forms is equally barren of measured effects together with control groups (Ackerman, 1958; Bell, 1961; Guerney, 1964; Ackerman and Kempster, 1967; Zuk and Boszormenyi-Nagy, 1967; Kramer, 1968a, 1968b, 1968c; Andronico et al., 1969).

In the related field of counselling as practiced by school guidance personnel and social caseworkers, a classic early controlled study -- the Cambridge-Somerville Youth Study -- failed to demonstrate greater effectiveness of counselling in reducing the incidence of delinquency on boys identified as pre-delinquent (Powers and Witmer, 1951; McCord et al., 1959). Two recent reviewers of the literature on counselling noted "evidence that counselling is clearly superior to the unspecified happenstances of life in the treatment of complex personality problems remains to be demonstrated" (Stefflre and Matheny, 1969). They went on to remark that almost all counselling studies are plagued with recurrent errors. They recited the familiar litany of problems: inadequate controls, lack of appropriate set of criteria, designs not comprehensive enough to account for effects of confounding variables.

That a study lacks a control group or fails to measure effects does not mean that psychotherapeutically-oriented interventions are worthless. But it places severe burdens on efforts to evaluate the absolute or comparative efficacy of therapy projects. Beyond this, however, even if one were certain of the superiority of the therapeutic interventions that have been undertaken, it does not necessarily follow that one would choose family therapy as a desirable strategy toward reducing family stress. Up to now, most of the psychotherapeutic techniques have been performed by and for a white middle-class population. A leading writer on family casework acknowledges that "casework's body of principles of conduct and influence has largely stemmed from a predominantly middle-class psychology and a middle-class value system" (Perlman, 1968, p. 69). One would still need proof that the same benefits would be produced for a lower-income population.

Parent behavior modification therapy. Most behavior modification intervention programs focusing on parents aim at affecting their social teaching behavior. They are therapies seeking thus to change measurable social behaviors in children. Typically parents are asked to specify the particular child behaviors they wish to modify. With the aid of a professional "therapist" these parental wishes are transformed into clearly defined and measurable goals. Baseline data are collected by the therapist or by the parent who has been trained. Principles of behavior modification are taught to the parent who then employs these techniques at home. Most training takes place in small groups but home visits can supplement the group training. At varying intervals of time, observation data is collected in the home measuring change in the child's undesirable behavior patterns. Occasionally, the parents' behavior is recorded in order to determine the effectiveness of training in modifying their actions.

Only recently has behavior modification therapy for parents been tried out. Many projects are exploratory pilot studies with a very small number of cases. Typically they are undertaken for parents of retarded or minimally brain-damaged children for short periods of time with little or no follow-up. Effects have been measured solely by parent reports of progress and satisfaction; one cannot easily judge the magnitude of change in the child or parent behavior (Galloway and Galloway, 1970; Hanf, 1968; Lindsley, 1966; Phillips, Bailey and Wolf, 1969; Rickert and Moore, 1970).[55]

Tharp, Wetzel and Thorne (1968) employed behavioral counselors to train parents in child management. The children's behavior problems varied but were clearly operationalized. Although this studv was the largest effort of its kind using multiple-criteria of behavioral progress, the data was incomplete and no follow-up information was provided. Therapists, parents and teachers of the children reported improvement of behavior on global ratings. But the correlation between ratings of improvement by parents and therapist staff was not significant.

The best research evidence on the effectiveness of behavior modification with parents is the work of Patterson and his colleagues. An early pilot study of five families showed significant changes in observed rates of deviant

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55. See Chapter 5 for a discussion of observational instruments used in behavior modification intervention.

child behavior after a parent training program in behavior modification. The effects were retained for at least a year as shown by the twelve-month follow-up observation. Two larger studies reported recently by Patterson (1971), together with a sub-analysis of a placebo treatment (Walter, 1971), revealed that after four weeks of intervention (twelve hours of professional time for the eleven families) there was a 43% reduction in targeted undesirable behaviors, which increased to a 59% reduction by the end of the treatment. Sixty-three per cent of the children showed large-scale improvement; 24% evidenced moderate gain; and only 12% were worse. Non-targeted undesirable behaviors also declined but the results were more ambiguous because of unreliability of baseline measurements. A similar intervention with somewhat more intensive professional training of parents, involving thirteen families of slightly lower social class and age, produced comparable results in preliminary findings.

Conclusion. Two very different types of therapy or counselling have been reviewed in this section: family therapy and parent behavior-modification therapy.

Family therapy and counselling has been practiced by psychologists, social workers and guidance counselors for at least 50 years. We know little about its effectiveness since evaluations and reports of results are usually presented in an anecdotal style. The few studies of counselling and therapy that have attempted to measure effects systematically using control groups indicate no significant benefits from treatment. Even granting that unmeasured or unmeasurable benefits have been attained, one would advise caution in exporting such therapy programs to lower-class groups where therapy intervention has rarely been tried.

Behavior therapy training for parents does not suffer from these limitations. Effects are carefully conceptualized and measured, and lower-class populations have been equally involved in experimental studies. The little evidence that does exist in this new field of family intervention shows considerable promise. Replications, make feasible by the careful specification of techniques and objectives, will provide confirmation or rebuttal of this initial promise.

A Note on Comprehensive Family Programs

Parent-Child centers are comprehensive multiple-focus pilot projects. Their concern is child development, in the areas of health and nutrition, and cognitive, social and emotional growth. But they focus not only on children, nor are they intended solely for child development. They also focus on parents; on other community members; and on local, state, and national public and private institutions. Their aims in regard to these institutions are power and income equalization, employment goals, and changes in institutional responsiveness to children, parents, and community members. Examples of such programs include Head Start and Follow-Through. As none of these programs neatly fits into any Part II category, we have placed them in chapters most closely corresponding to the major emphasis of intervention. Thus Head Start programs are discussed in Chapter 8, Preschools; Follow-Through is considered in Chapter 7, Elementary Education. Parent-Child centers focus their intervention on children 0-3, a downward extension of Head Start. Thus they could logically be considered part of Day Care as defined in Chapter 9. However, since Parent-Child centers have focused on families and parents as the major means of influencing the development of very young children, they will be treated in this, the Family Intervention, section.

Although planning grants were first awarded in early 1968, Parent-Child centers have not yet had a formal outcome evaluation. The printed information available consists of an excellent National Survey of the first year (Kirschner Associates, Inc., 1970b) and a report of Preliminary Impact Data (Center for Community Research, 1972). Additional evaluations are under way in OCD and OEO. It is questionable whether these efforts can produce the kind of information useful to determine past and present program effectiveness, in order to plan for better future Parent-Child centers.

The obstacles to producing useful and valid information lie not only in the quality of available evaluation instruments and not necessarily in the quality of the evaluating proposals or implementation. They are rooted in the difficulties of any evaluation of comprehensive multiple-focus social action interventions, discussed with great acuity in relation to Parent-Child centers in the first National Survey (Kirschner, 1970b, pp. 400-421). Federal guidelines for such a program, intended to apply to a variety of families with different problems in widely scattered locations, cannot possibly contain clearcut details for program operation. Thus the goals are necessarily broad, sweeping and ambiguous. Both the relative priority of goals and the means of implementation are left largely to local initiative. As a result, there is not one program but as many programs as there are sites. While the language sounds comprehensive, variation in emphasis on goals is considerable and variation in implementation is even greater. Some Parent-Child centers emphasize day care; others, preschools; others, social services to parents. Usually there are token efforts to make the centers appear as though they are doing all three equally.

This variation has proceeded without conscious design. Hence issues of great importance about the relative effectiveness of emphasizing certain goals and certain strategies could not be tested. The selection of sites was random but with no rationale useful for statistical purposes. Another overriding difficulty has been lack of interest and indeed hostility shown toward research and evaluation components of the program found in many centers, especially those involving real parent influence on decision-making. While the Preliminary Impact Report (Center for Community Research, 1972) de-emphasized this problem, largely by ignoring it, the first National Survey (Kirschner, 1970b) mentioned it as a serious obstacle. It is highly unlikely that the situation has changed since 1970.

The effect of Parent-Child centers. Without valid data on program impact, especially as it relates to children, the conclusions which can be reached are necessarily tentative and subject to biases -- both of the sample of parents surveyed and of the project staff's self-interest in perpetuating their project and program. The conclusions set forth are based mostly on the original report of National Survey:

1. Projects clearly favored providing service over meeting research and evaluation requirements. Hence they were not pilot demonstration projects.

2. Mothers who became involved in the program were enthusiastic. Nothing was found about mothers who were not involved. Although the Preliminary Impact Data Report claims that fathers were more extensively involved, the extent and effect of that involvement are not clearly indicated.

3. Movement of families into and out of the center projects was high.

4. Beyond a common emphasis on service and a tendency to emphasize services directed at the mother, projects gave widely varying priority to components. A few projects provided a strong health component, others paid little attention to health. Few had much nutrition emphasis beyond providing one meal a day. In some, no center day care was provided while others had placed considerable investment in day care. Employment for parents was a major consideration in many but not all. Likewise, the extent of parent decision-making and participation in governing boards differed considerably.

5. Outcomes in terms of child gains on standardized development tests were reported for some centers. The gains were greatest in more structured preschool programs but the gains found were probably statistical artifacts of regression between pre- and post-test. Improved health and more self-confidence, friendliness and cleanliness were mentioned anecdotally.

6. Mothers who participated showed increased employment and, from anecdotal information, seemed to be better housekeepers, better groomed and dressed, showed higher self-concept and increased their use of community resources.

7. However, these gains reported for mothers did not necessarily lead to less strife in the home or at the centers.

8. Incidents of project visibility in the community, coordination of community resources and changes in policies of public and private institutions in response to center initiative were noted for clinics, welfare departments, food distribution centers, housing authorities and local utilities.

Conclusion

What evidence exists about the effects or benefits of family intervention projects which could guide policy for intervention programs in child development? The question is important for at least two reasons: (1) the family, the primary natural social unit of human beings, is under increasing attack from a variety of sources (modern industrial society, women's liberation, communal proponents, media); and (2) the federal government, although pursuing many policies that affect families, has rarely in the past conducted large-scale direct policies of family intervention with the aim of "reforming" family life and thus enhancing child development.

The immediate concern in this section on family intervention was to select from a multitude of already existing projects those which seem promising or exemplary in terms of benefits. From a very large number of possible family interventions we have chosen four categories or types of interventions which fit our limited definition of being "family interventions".[56]

Within projects for each category we had to decide what constituted an "exemplary project". The obvious procedure would be to look at the evidence reported for each family intervention project. Yet at this beginning step we found difficulties so serious as to make one wonder at the worth of going further. For the "research evidence" has typically failed to measure -- indeed, in many cases, to even conceptualize -- effects. Those few projects in the four categories that surmounted this primary (but not elementary) obstacle were then looked at to determine whether an adequate research design existed. Evaluators and researchers conduct lengthy debates on what constitutes an adequate research design. In our case, faced by a paucity of studies that even measure effects, we decided to settle on the existence of some kind of control or comparison groups as the minimum standard for adequacy. Therefore any project coming to our attention which measured benefits, used some kind of control group, and showed statistically significant results favoring the intervention treatment were included.[57]

We are not convinced that this is the best procedure for trying to identify exemplary programs. It is reasonable to argue that the most effective project directors in a field like family intervention for child development among poor people would not care to get involved in the murky, unrewarding and time-consuming tasks involved in measuring a variety of effects accurately and usefully for research purposes. An equally telling objection can be raised about the adequacy of a research design which merely meets our basic requirements of employing some kind of control or contrast group. Finally, a finding of statistical significance may have little real significance for a policy-maker. Even the category of parent training projects where research designs most closely satisfy and often go beyond minimal requirements, many valid objections are still entertainable. In the other three categories of family intervention, hard knowledge is even more problematic. It would not be misleading to claim that very little scientific knowledge exists, derivable from research evidence in family intervention, which can provide answers to the question of what has worked -- no matter what one's definition of "worked" may be. For the program designer who must know, in addition, what will or might work in different contexts and conditions, our ignorance is just as deep.

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[56] It is interesting to note that the Kirschner survey of the first year projects of Parent-Child centers gives evidence to justify this classification. While the scope of the Parent-Child Center Program is admittedly broader than family intervention as defined here, among the Parent-Child Center federal guidelines are objectives that include what we have defined as family interventions: "Strengthening family organization functioning by involving the youngest children, the parents, older children in the family, relatives" (Kirschner Associates, Inc., 1970b, p. 5). In the first year efforts of the 35 centers reported in 1970, the investigators found examples of activities in the projects which covered all of the four categories we are here considering.

[57] Projects examined which failed to meet these criteria are included in the bibliography for reference purposes.

Yet if little "scientific knowledge" exists, there is some useful "wisdom" that might be gleaned. Although such wisdom does not reside primarily and certainly not entirely in the reports of professional researchers and evaluators, it is legitimate to use their observations as one of a number of inputs. The informed insights of professional researchers and evaluators specific to each of the four categories reviewed have been summarized at the end of the discussions on parent education, parent training, family social casework and parent therapy, and are repeated here:

Parent Education

1. Parent education projects, especially sewing and child management, are popular with some low-income mothers. Kirschner Associates, Inc. (1970b) field observers were almost unanimous in reporting that Parent-Child centers had a parent education component which often was a highly popular part of the center program.

2. Parent education programs are not popular with fathers. This is true "even when the leaders were men and the program was built around such male interests as carpentry, mechanics or athletics" (Kraft and Chilman, 1966, p. 13). In Parent-Child centers which necessarily focused parent education on concerns of child development, the fathers manifested the typical American male attitude, which is to regard such matters as women's concerns.

3. Parent education programs involve only a small number of target area parents. Attendance is low and sporadic, with a few hard-core participants; most efforts last only a few sessions and then fold (Brunner, 1959; Verner and Davis, 1964). The few who attend regularly, at least in the non-coercive programs, are the upwardly mobile poor Observers are almost unanimous that the poorest, most disorganized, "multi-problem" families are not reached by parent education programs.

4. Too many parent education programs for low-income families have not provided day care or baby sitting (Mannino and Conant, 1969).

5. Parent education programs flounder in part because poor parents often lack time to attend, and are preoccupied with more immediate and pressing problems. They often have unpleasant memories of schooling from their own childhood, and hence resist projects using lectures and extensive reading matter (Mannino and Conant, 1969).

6. Many low-income parents resent and resist middle-class attitudes and teachings which they feel are inappropriate to their life situation and which appear to them condescending.

7. When problems of income, housing, employment and physical safety are severe, few parents are responsive to parent education programs.

Parent Training

1. The parent training projects selected as exemplary show moderate to fairly high (1/2 to 1 standard deviation) IQ, language development or achievement gains during the period of actual intervention.

2. Where follow-up has been done, the gains are reduced but not entirely lost one or more years after intervention has ceased. The more the parent has been involved the more long lasting the effect.

3. Even higher gains are reported for intervention treatments where non-standardized local tests measure the specific kinds of cognitive learning or language development taught.

4. Very little success has been obtained in the use of non-cognitive tests for children. Questionnaires and interviews show favorable attitudes on the part of mothers, but the conditions under which they have been administered make the reality of these favorable effects suspect.

5. Where both the mother and child are involved in training in the home and a center, greater and more long lasting gains in IQ are found (see results of Syracuse Children's Center, Chapter 9).

6. As far as the criterion tests of cognition demonstrate, it seems to make little or no difference whether the parent trainer is a professional teacher, professional social worker or trained paraprofessional.

7. No curriculum used by parent training projects seems significantly better than another.

8. Like parent education, parent training means working primarily with mothers. Fathers and other family members are rarely involved (Lazar and Chapman, 1972, p. 122).

Social Casework

> 1. There is no basis for declaring casework intervention either effective or ineffective without examining the total context within which the service is rendered....Most of the action-research projects had as their goals helping lower-class families, yet none of the service programs provided

> adequate economic aid....When deficit needs of families are not met, (then) the provision of other forms of service may not be an effective investment.
>
> 2. The greater the shortcomings in existing community services, the greater the need to make a new program of intervention multiservice, seeking to cope directly with the salient needs that have been identified.
>
> 3. A consideration of the studies that identified components of change shows that intervention in instrumental areas of social functioning appears more effective than service in expressive areas....Advice, guidance and support in such areas as child rearing, health care, homemaking, and house hunting had a sharper impact on family living than interpersonal counseling or treatment of behavior problems.... The relative effectiveness of certain types of instrumental intervention suggests that various kinds of specialists in such areas as child care, public health, home economics, vocational counseling, and others have a part to play in family service. The experience derived from the action-research projects suggests that persons with undergraduate training are able to perform effectively, particularly when they are supervised by a trained and experienced social worker.
>
> 4. The preventive approach...appears to be more than a hope or vision. Early intervention does make a measurable difference but that difference was found to be significant in only a few specified areas....Although the research design did not give special emphasis to service in the intrapersonal and interpersonal areas, some types of instrumental intervention fell short of desirable goals because of the absence of means to effect any fundamental change in unemployment, lack of material resources and poor housing of many families.
>
> (Geismar, 1971b, pp. 465-475)

Parent Therapy

1. Family therapy and counselling have been practiced by psychologists, social workers and guidance counselors for at least 50 years. We know little about its effectiveness since evaluations and reports of results are usually presented in an anecdotal style. The few studies of counselling and therapy that have attempted to measure effects systematically using control groups indicate no significant benefits from treatment. Even granting that unmeasured or unmeasurable benefits have been attained, one would advise caution in exporting such therapy programs to lower-class groups where therapy intervention has rarely been tried.

2. Behavior therapy training for parents does not suffer from the limitations of psychotherapy. Effects are carefully conceptualized and measured, and lower-class populations have been equally involved in experimental studies. The little evidence that does exist in this new field of family intervention shows considerable promise. Replications, made feasible by the careful specification of techniques and objectives, will provide confirmation or rebuttal of this initial promise.

Beyond these specific conclusions, a few overall observations which apply to family interventions in general will be offered here:

1. The projects where research has been done best seem to indicate that not much measurable change has been made. Although in a few cases in parent training and social casework statistically significant differences favoring the intervention treatment have been discerned, the differences are small. This is not surprising when one realizes that compared with the magnitude and complexity of problems facing poor families, the amount of time and money spent on any of these interventions is quite limited.

2. Whatever statistically significant changes do show up at the end of treatment are often not found to persist in the same degree after more time has passed.

3. On the other hand, the state of the art in conceptualizing and measuring potentially important changes in family function is so primitive that there is a possibility that "important" benefits might not be captured in the research studies we have reviewed. For this reason, the evaluator ought to encourage the use of a variety of instruments, ought to encourage the development of more valid and reliable measuring instruments than now exist, and ought not put too much faith in any existing instrument.

4. Given the above caveats, it seems that those projects in parent training, family social casework (for social service referral) and behavior therapy which attempt intervention on a clearly delimited problem do better than those with undefined global goals. The evidence from parent training indicates that substantial immediate gains are produced which are retained for at least a year or more, and which might have beneficial effects on younger siblings. It also appears that the use of highly-paid professional teachers, therapists and social workers does not seem to bring about greater change in measured benefits than the use of trained parents or paraprofessionals.

Chapter II: Health Care Programs

Summary

The succinct and systematic characterization and current health programs for disadvantaged children proves to be a remarkably difficult task. Virtually none of these programs, as far as we have been able to determine, have been evaluated or monitored in ways pertinent to this study. Several major evaluations are presently underway, but findings have not yet been published.

Given the lack of completed studies, the problem of describing programs and relating current efforts to critical child health needs is large. This section is an attempt to begin a process of organization and analysis of programs as they relate to the special needs of young children. It is perhaps most easily conceptualized as a matrix, having on one dimension critical child health needs or problems--such as malnutrition, infectious diseases, handicaps, or sensory deficits--and on the other particular programmatic approaches to child health--such as screening, comprehensive health, or nutrition programs. The cells thus defined represent correspondences between programs and problems. Had evaluation data been available in terms of the matrix, it would have been possible to in fact discuss the matrix cell by cell, i.e., the specific patterns in which the federal effort interfaces with the health problems of children. In its absence, descriptions of federal programs' effects in terms of child health are largely conjectural and inferential.

We discuss programs with five emphases: comprehensive but specifically targeted health programs (e.g., maternal and Infant Care, Children and Youth), health screening and treatment programs (e.g., Health Start), multiservice programs with a health component (e.g., Head Start), nutrition programs, and family planning programs. In each case examples are given, and the relative effectiveness of programs within the group, and of the group contrasted with other groups, are discussed.

Looking at existing programs against the patterns of need, we find very spotty coverage of the matrix. Some programs, such as Maternal and Infant Care and family planning, are directed at both critical health needs and high risk groups in a most appropriate way. Some programs which do not now exist in a coordinated way, such as early diagnosis and treatment of handicaps and chronic conditions, would, from evidence in other sources, have a large impact on the matrix (i.e., intervening between the critical ages one to four). On the other hand, some programs are not organized in such a way as to make evaluation in terms of the matrix possible. Children and Youth, for example, combines early infancy care with some screening with general services for older children without a programmatic mandate to apportion inputs in these areas in relation to critical health needs. Other programs with potentially large impacts seem to be skewed because their programmatic goals are not entirely consistent with child health needs. Thus many of the feeding and food distribution programs do not address the issue of feeding very young children. Looking further, we find gaps in which no programs seem presently to operate and no evidence of non-federal models to fill those gaps. One is that of combining medical, psychological and educational diagnoses and treatments; the failure of Head Start and Follow Through to become truly integrated and comprehensive does not bode well for the newer Parent-Child Center projects. Another is the whole area of social illnesses in children (child abuse, neglect, accidents).

We conclude by expressing our dissatisfaction with the amount of information which we have been able to gather about child health programs. We have by no means exhausted the literature, and yet we have surveyed it and found the analytically useful material so scattered and so unrelated that it is difficult, if not impossible, to pull together a picture of what child health care for disadvantaged children is in fact like today.

Chapter 11: Health Care Programs

To succinctly and systematically characterize current health programs for disadvantaged children proves to be a remarkably difficult task. Our listing of federal programs for disadvantaged children includes 65 whose activities in some way involve health and/or nutrition. These programs run from the multi-billion dollar Medicaid program (Title XIX of the Social Security Act) which covers indigent and medically indigent persons of all ages in every state, to categorical grants for demonstration Children and Youth projects (59 in all), to dental health research fellowships not directly targeted at the poor.

Of the 65 programs, approximately 24 are service programs--seven for special medical problems (immunizations, family planning); eight comprehensive medical care programs for special groups such as Indians, migrants, mothers and infants; seven nutritional or feeding programs; and two multiservice programs of which health is one component (actually one of these "programs" includes all Office of Child Development efforts: Head Start and Parent-Child Centers, both multiservice programs, and Health Start, a comprehensive medical care experiment). In addition, two programs (Medicaid and aid to the Blind) provide financial support to children. Of the remaining programs, 16 are for research, 11 for training (of both service workers and professionals), five for technical assistance, and seven for other functions (construction of facilities, information dissemination). Two of the service programs, Maternal and Child Health Services (121) and Crippled Children's Services (122) are block grants to states which are devoted in varying proportions to services, research, training and providing facilities. Virtually none of these programs, as far as we have been able to determine, have been evaluated or monitored in ways pertinent to this study. Several major evaluations are presently under way, but findings have not yet been published. The dearth of evaluations is not fully explained by the weaknesses of current evaluation tools discussed in Chapter 6. As was pointed out in the conclusion of that discussion, there is little doubt that better studies could be carried out given the methodologies and constraints of today.

Given this lack of pre-existing studies, the problem of describing programs and of relating current efforts to those critical child health needs already detailed is large. After much grappling with how to present the data, we have decided on the following approach. This section is not a comprehensive review of the existing literature, nor of existing programs (including non-federal ones). Rather it is an attempt to begin a process of organization and analysis of programs as they relate to the special needs of young children. It is perhaps most easily conceptualized as a matrix, having on one dimension critical child health needs or problems--such as malnutrition, infectious diseases, handicaps, or sensory deficits--and on the other particular programmatic approaches to child health--such as screening, comprehensive health, or nutrition programs. The cells thus defined represent correspondences between programs and problems. In Chapter 6 we essentially attempted to identify the various needs and problems of the first dimension, and found it impossible to do so rigorously. In categorizing program for the second dimension, we have found no strict taxonomy to separate the programs, and consequently the categories we do use overlap.

Had evaluation data been available in terms of the matrix, it would have been possible to in fact discuss the matrix cell by cell; i.e., the specific patterns in which the federal effort interfaces with the health problems of children. In its absence, descriptions of federal programs' effects in terms of child health are largely conjectural and inferential. The preceding chapters in this part of the present report serve as the major bases in their respective areas for the recommendations in Chapters 12 and 13; the health recommendations in Chapter 13 will instead be largely based on programmatic inferences from the child health needs and goals developed in Chapter 6.[58] Nevertheless, it is useful to discuss even the meager data about present efforts; such a discussion makes up the rest of this chapter.

We shall discuss programs with five emphases: comprehensive but specifically targeted health programs, health screening and treatment programs, multiservice programs with a health component, nutrition programs, and family planning programs. In each case examples will be given, and the relative effectiveness of programs within the group, and of the group contrasted with other groups, will be discussed. Where data are available, they too will be cited.

Clearly not all 65 programs involving child health or nutrition fit this scheme. We do not address the question of research programs' effects on child health, nor do we directly assess the value to the child of various scholarship and fellowship monies. Twenty-seven of the 65 projects represent such cases. Other programs obviously affect children, but their goals are more general and we are simply unable to discuss them usefully. Neighborhood Health Centers represent such a case; evaluations, while generally excellent in design and coverage, simply are not focused on issues which concern us here (Sparer and Johnson, 1971; Geomet, 1972).

Finally, we discuss other efforts to analyze child health care. From all of this we shall draw some very general conclusions, which will be developed further in Chapter 13.

Comprehensive but Specifically Targeted Health Programs

In this category we include programs that are quite clearly directed at the general health problems of a specific target group, and which have a fairly comprehensive commitment to dealing with those problems. The aforementioned Neighborhood Health Centers represent such a case; we discuss Maternal and Infant Care, Children and Youth Projects, and various family health programs.

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[58] See particularly the discussion headed "Impact of the Health Care System".

Maternal and infant care program. This program, funded under Title V of the Social Security Act, operates 60 projects across the country. It was established in 1965 and had $42.7 million appropriated in FY 72. The legislative mandate for the program indicates that it was designed to attack many of the critical health needs which we have identified. As paraphrased by Weckworth, its goals are the "reduction of incidence of mental retardation and other handicapping conditions caused by complications associated with child-bearing, reduction of infant and maternal mortality, particularly in areas with concentrations of low-income families without access to prenatal care, infant care and family planning services". (Minnesota Research Systems, Inc., 1972, p. 13) We do not know fully to what extent the program has lived up to those goals. One large-scale evaluation of the program has been contracted for the subgoal of reduction of infant and maternal mortality rates. The study, done by the University of Maryland, has completed the data collection phase and is in the process of analysis and release of final results. Preliminary information indicates that the projects may be having an effect (HEW, 1970).

In testimony before the Senate Appropriations Committee in 1971, the following indirect and ambiguous evidence was presented showing the drop in infant mortality rates in selected cities with large Maternal and Infant Care projects.

Infant Mortality Rate/1000 Live Births

	Calendar Year		% Decrease
	1966	1968	
National Rate	23.7	21.8	8.2
Major M & IC Projects:			
Miami	23.7	21.5	9.3
New York City	24.9	23.1	7.2
Detroit	28.0	26.8	4.3
San Juan	37.6	28.6	23.9

Source: Hearings before the Senate Committee on Appropriations. Departments of Labor and HEW appropriations. 92nd Congress, 1st session. p. 3356

After presenting similar data for metropolitan sub-areas in which large maternal and infant care and family planning programs have been established and accompanied by drops in infant mortality rates relative to city-wide or comparable statistics, Arthur J. Lesser, head of the Maternal and Child Health Service, notes that

> while the reasons for the dramatic change . . . have not been established in a cause and effect relationship, the only new contributory factors that have been identified are the rapid increase in family planning among the poor and comprehensive maternal programs focused on the most vulnerable population.
> (Lesser, 1969, p. 895)

More consistent but less persuasive evidence can be found by grouping states according to the pattern of their infant mortality rate decreases before and after 1965, and then comparing that ranking with the number of Maternal and Infant Care projects in each group (Hunt, 1970). The following table summarizes the findings, which do suggest at least a consistent relationship between projects and reduced rates. However, the simultaneous introduction of Medicaid (a program which varies greatly from state to state) and neighborhood health centers makes any causal conclusions from the data impossible. Groups B and D, which have more projects per State than Groups A and C and whose projects have operated for longer periods, had the most noteworthy annual reductions in infant mortality rates since 1965.

Distribution of Maternity and Infant Care Projects,
Fiscal Years 1965-1968

State groups	Number of States Total	Number of Projects Total	Number of Projects Per State	Average years in operation Per State
All groups	49	52	1.1	1.9
Group A	14	7	.5	1.4
Group C	15	17	1.1	1.7
Group B	13	18	1.4	2.0
Group D	7	10	1.4	3.0

Source: Hunt, Eleanor, Infant Mortality Trends and Maternal and Infant Care, Children, 1970, 17, 90.

According to the testimony of Dr. Vernon E. Wilson, HSMHA Administrator, on July 19, 1971 before the Senate Appropriations Committee, Maternal and Infant Care centers have helped reduce the national infant mortality rate from 24.7 per 1,000 live births in 1965 to an estimated 1970 rate of 19.8, a reduction of 20% or four times the rate of decrease of the previous ten years.

The issues of reduction of mental retardation and other handicaps are more complex and require long-range longitudinal studies of cohorts of patients, offspring and controls, since reliable tests for retardation and estimates of the permanence of some handicaps are not applicable until the children are older. Furthermore, such studies require an examination of the entire process and organization of the projects and the milieu in which they are located, since the possibility of exogenous variables affecting apparent rates of increase or decrease is very large and causal linkages are extremely difficult to establish. To our knowledge, no such studies are underway or being contemplated. At the present time, the projects are so few and so varied in their environments (some being completely independent and free-standing, and others existing almost only as a legal funding source for certain patients in a community comprehensive care project) that such a comprehensive evaluation would be able to derive few universal conclusions about effectiveness or optimal organization.

Concerning final goals of targeting the projects on underserved, primarily poor groups, we do have some data which are not too favorable. The Child Health Care Policy Task Force found that only 33, or 55% of the 60 Maternal and Infant Care projects are in the states with the highest infant mortality rates (Child Health Care Policy Task Force, 1972, p. 1[illegible]). Furthermore, the Task Force identified 42 counties as being high-risk by using a measure of excess infant deaths (400 or more deaths over the figure representing the U.S. average; this measure excludes sparsely populated rural districts). Of these 42 counties, 21 had no Maternal and Infant Care project (11 had no federal health care project at all). The coverage of the projects has remained stable for the last several years at around 129,000 mothers and 43,000 infants per year (many of the women receiving only family planning services).

While some of the other projects may be located in cities or specific areas which are high-risk (even though the state does not fall below the median rate), this is still not a very good record for what is, if one uses the proxy measure of infant and maternal mortality rates for risk, the easiest objective to put into programatic terms. Part of the failure is undoubtedly pure politics -- the art of grant-writing and grant-awarding has never been known to be a fully equitable, even-handed matter; but this is true in virtually any categorical grant-in-aid program. Part of the failure, however, is probably due to the workings of the medical care system and illustrates one of the difficulties with federal intervention. Merely announcing that money is available for new programs, and even going so far as saying that the money can only be obtained in certain, listed areas, does not guarantee that programs consistent with the legislative intent will be set up. If an area is without health resources, there is no one to sponsor the project; if the local medical establishment opposes such "socialized medicine" it can prevent funds from coming in. We point this out not because it is unique to Maternal and Infant care centers, or even always true for them (in fact, although there are no data on the issue, we would suspect the opposite to be the case -- maternal and infant care is probably the least political or objectionable of any health program), but to remind the reader of another of the differences between health and education programs -- namely, the added lack of control and reduced ability to target categorical, compensatory programs when they are being imposed not on a universal framework of reasonably similar proportions (i.e., public education systems) but rather on a vastly heterogeneous, private market with pockets of public responsibility.

Children and Youth projects. This program, begun at the same time as Maternal and Infant Care, is designed to provide comprehensive care centers for children age 0 to 18 who are poor or medically underserved (Close, 1969). There are presently 59 such projects with a FY 1972 appropriation of $47.4 million. The program has been operating at a fairly stable rate for the last few years, serving 464,000 children.

Children and Youth is probably developing the strongest data base of any existing federal child health program. An extensive reporting system has been developed by Vernon Weckworth of Minnesota Systems Developmental Project (Weckworth, 1971; de Geyndt, 1969). The model, as has been discussed in some detail in Chapter 6, attempts to plot the progress (or regression) of individuals through the Children and Youth system with a goal of having every eligible child at a level of health maintenance. There are masses of data being generated on a quarterly report basis: number of centers with lead paint screening, number with community boards, number and types of personnel trained, number of new registrants, and so forth. The analytic uses to which this data will be put remain to be seen. The present form of the annual summaries is too raw to be useful as a bases for broad policy considerations.

In terms of our matrix, Children and Youth Projects potentially cover the complete range of critical child health needs because of their eligibility base. It is interesting, therefore, to note the age distribution of the registered children (Lesser, 1969, p. 897).

less than 1 year	41%
1 to 9 years	57%
10 to 18 years	2%

It may seem surprising that so many of the children are infants. This would suggest that expanded Maternal and Infant programs could handle 40% of the present cases. This is important because, as we discuss in our conclusions to this chapter, in many ways Children and Youth makes little sense as a separate program. Briefly, although such projects are aimed at comprehensive, interprofessional care and are trying many innovative programs (Children & Youth Projects, 1971; American Academy of Pediatrics, 1971), they are in opposition to several theories of health care. That is, they isolate the poor into a separate care system, they isolate the child from his family, and they are so few in number that they set up new access inequities by not always being located in areas of the highest need or by not being able to handle all who need care (Task Force, 1972). In order to place Child and Youth projects in perspective, it is necessary to discuss patterns of child health in greater detail, as shall be done at the end of this chapter. We point out here that, aside from the early infancy years, there is nothing in the nature of most critical health needs of children that clearly requires that they be treated in a separate care system. That is, the organizational mode for a child's health services might ideally be his inclusion in a comprehensive health care delivery system.

Family Health programs. Concurrently with the move to provide special programs directed toward critical health problems or high-risk groups, there has been a trend in federal health programming toward comprehensive health care delivery systems which not only include all ages and all conditions but also all income levels. This trend is usually accompanied by a call for family-centered care and frequently for team practice or the use of new health personnel.

In this report, we will not even enter the argument about Health Maintenance Organizations (HMO's), prepaid group practice, medical foundations, or area-wide management networks. We will note that several federal programs which serve large numbers of children fall within such categories (Madison, 1969). They include the OEO Neighborhood Health Centers, comprehensive centers funded under section 314(e) of the Public Health Service Act, some Model Cities health programs, and the new program replacing OEO and 314(e), Family Health Centers.

The evidence from these programs, many of which are among the most thoroughly evaluated in the health field, and from non-governmental programs in the same vein, strongly indicates the impact that they are having on changing the health status of users, and particularly of non-white users (Geomet, 1971; Donabedian, 1969; Sparer and Johnson, 1971); on the acceptability of medical care delivery to the users (Bellin and Geiger, 1970; Elinson and Herr, 1970; Geomet, 1971); and on the quality of care being delivered (Donabedian, 1969; Morehead et al., 1970).

Intellectually, this movement toward family-centered health care which incorporates both poor and non-poor into one system is quite solid. There is very good evidence from non-federal programs that family medical care is more effective in treating each family member because of the increased knowledge available to providers (Silver, 1963; Beloff and Weinerman, 1967; Beloff and Willet, 1968; Alpert et al., 1970). These studies also report high levels of satisfaction by users, both poor and non-poor (Freidson, 1961; Goodrich, et al., 1970; Bellin and Geiger, 1970; Alpert et al., 1970).

We should note that none of the studies have specifically looked at the results for children, nor have they done any longitudinal study of health status outcomes. The most apparent changes seem to take place in utilization patterns (less emergency room care; fewer hospitalizations or questionable surgery; use of primary physicians). The validity of such improvements should properly be left to other studies than this one.

One part of the family health care movement is better manpower utilization, necessitated by the increase in demand for services, and desirable as a means to improve care and to extend care for psychosocial and non-medical needs. The evidence in these areas deserves much more space than is possible here. We can only cite some representative studies which seem to reflect the current state of knowledge. The possibilities of team practice are still to be convincingly demonstrated; findings from previous programs are mixed (Beloff et al., 1968; Beloff and Willet, 1968; Sloss et al., n.d.). Kisch (1971) has suggested reasons for the lack of success due to consumer expectations; Freidson (1970) has suggested ones related to the professional structure of medical care. Both arguments are sound. On the other hand, there is excellent evidence and testimony supporting the development of such new "team" members as pediatric nurse practitioners (Ford and Silver, 1967; Silver et al., 1967; Silver et al., 1968).

There are several arguments against comprehensive family care that should be dealt with. Gordis and Markowitz (1971) attempt to show that comprehensive and continuous pediatric care has no effect on the health and medical care utilization of one of two comparable groups. They measured effect by looking at the completeness of immunization, utilization of medical resources, morbidity and mortality and, in a separate study, compliance with drug-giving recommendations. They found no significant differences after one year between a control group and those children and mothers who were offered a comprehensive program provided by a team of professionals. However, their original groups were chosen (randomly) from primiparous adolescents (under 18) who had come to the hospital (Sinai Hospital of Baltimore) for prenatal care. Virtually all of these girls were non-white, and most were unmarried and poor. This is the group which is, as was shown in Chapter 6, probably the most unlikely to receive prenatal care. Hence, the level of motivation of all the girls in the sample (who did seek this care) was probably quite high, and hence they would continue to seek well-baby or illness care for their infants even if they had no single, convenient source of care. In effect, the controls would seek the services provided to the experimentals. In the second study, the children studied (77 of them) were receiving oral penicillin for rheumatic fever. They had been under treatment for at least one year before the experiment, as compliance tests were made during that time. It seems quite possible that parents having established compliance patterns for a long period of time are not likely to radically shift behavior due to a program not specifically directed at that behavior.

This possibility is supported by evidence from Alpert and his coworkers (Alpert et al., 1968; Alpert et al., 1970). Based on a three year study of users of an experimental comprehensive pediatric care center in a Boston pediatric medical center with a focus on the family, they found significant differences between users and two control groups on measures of satisfaction, utilization patterns, and planned response to selected medical problems. However, they found no changes in general health attitudes or in planned responses for adult problems. This specificity of attitude and behavior change impressed the investigators: "The fact that the changes are selective and rather specific suggests that the range of services provided will determine the range of attitudes affected." (Alpert et al., 1970, p. 505).

In conclusion, we can only note that this discussion, although abbreviated, should suggest the tremendous impact which family-centered comprehensive care could have. It seems particularly relevant to the needs of children in the matrix, since so many of those needs are in fact the outcome of family living patterns or family resource deficits.

Early Screening and Treatment

The term screening is generally used rather loosely. In the strictest sense, it is differentiated from a physical examination or diagnostic examination because it (a) consists mainly of routinized or even automated testing procedures which can be performed by non-professional health personnel (blood tests, vision tests, hearing tests, chest X-rays, etc.); (b) is frequently designed to test for only one or a few conditions of special concern (lead paint poisoning, sickle cell anemia, etc.); and (c) must usually be supplemented by referral to other medical services if abnormalities are detected.

The most popular version of screening now advocated for adults is "automated" multiphasic screening. This format, which incorporates a battery of tests of physical conditions and frequently includes a psychological questionnaire to help locate functional disease or stress, is seen as a modern triage system to separate the heterogeneous masses of people seeking care into those who are truly sick, the "worried well", and so forth (Garfield, 1970).

For children, however, screening has been advocated for two slightly different purposes. First, it has been used in Head Start and other such programs to serve as the access to medical care for children not necessarily seeking care. The concern here is with undetected diseases, handicaps, and conditions (such as untreated dental caries) which will hinder the child's development if unattended to. Frequently such programs are operated without the close linkages to follow-up treatment typical of adult screening programs.

Screening has also been advocated for young children as a combined physical-behavioral operation. It is this type of screening which has the greatest child development implications. Information on the child is gathered on physical, mental, and behavioral factors and combined into an individualized diagnosis and suggested treatment pattern. The importance of such screening is that early detection of handicaps, either physical or mental, can significantly reduce their later severity in many cases. For example, one of the first recommendations of the Joint Commission on the Mental Health of Children, following family planning and systematic prenatal care, is that of comprehensive pediatric and mental health services for children under three. The Commission was very concerned about the current tendency of children to "disappear" medically between departure from the hospital after birth and school or preschool entrance. These are critical years of rapid development; conditions (such as metabolic disorders) undetected at birth become recognizable and treatable.

> Corrective measures for children with hearing, motor, speech and visual handicaps can often prevent interference with learning which leads to retardation in mental development and which may be complicated by emotional patterns. Estimates indicate that about 20 to 30 per cent of chronic handicapping conditions of childhood and later life could be prevented by comprehensive health care

> to age five, and if approximately 60 per cent of health care were extended to age fifteen.
>
> (Joint Commission, 1970, p.33; emphasis added)

The first step in such care must be an early screening and diagnostic effort.

The Kauai study (Werner, Bierman, and French, 1971) found that diagnoses of serious handicaps (physical, mental, or both) at age 2 were generally confirmed by reexamination at age 10. (Evaluations were done by a special team which also used information previously gathered about the children.) Although the study team found that the physicians of Kauai had done rather well in detecting defects generally considered to be recognizable in newborn infants (29 children), and in getting the children into special treatment before age 2 (37 children), the special examinations done by the team picked up 75 additional children with handicaps requiring special diagnostic and treatment services (p. 44). Furthermore, in the area of mental retardation, although most severely retarded children who also had physical defects had been recognized by family physicians, the two-year special examinations were responsible for first recognizing the mentally retarded children without other handicaps (p. 45). Even slightly discounting this last finding due to the ambiguity of IQ test scores at age 2, it is clear that a concerted effort to screen all children at age 2 had a substantial payoff in detecting handicaps. The findings are even more important when one considers the fact that Kauai is a stable society, with maternal and health care for all classes substantially more accessible than that present in inner city areas or many rural locales.

In recommending at least one good medical and developmental examination for every child in early childhood, the Kauai investigators note that the

> . . . need for closer cooperation between the various professions attending the birth and care of the child is indicated in order to spot early developmental failures in children suffering from deleterious perinatal conditions and to provide them with a supportive and stimulating environment to minimize the effects of early damage.
>
> Hospital, birth, and physicians' records contain information about the newborn indicating potential trouble -- information that is seldom available to community agencies for utilization in planning with the family for the special needs of high-risk infants.
>
> (Werner, Bierman, and French, 1971, p. 138)

The value of screening and follow-up on a universal basis, utilizing the registry concept, is already widely accepted in other countries.

> In Europe, especially the United Kingdom and Sweden, there is a general belief that early case finding must depend on universal screening of developmental progress, followed by detailed assessment of all children who show developmental delay.
>
> (American Academy of Pediatrics, 1971, p. 56)

A major maternal and child health program analysis done several years ago (Maternal and Child Health Care Programs, 1966) estimated that a program of case-finding and treatment (done at several ages - 0, 1, 3, 5 or 6, and 9) would prevent or correct 30% of chronic handicapping conditions. The first screening could be performed in the hospital; the last two could be carried out through the schools. However, 1-year-olds and 3-year-olds are generally unreachable. Head Start and its Health Start offshoot have been attempts to reach at least part of this preschool aged population.

Health Start. As an example of an existing program which emphasizes screening, we look now at Health Start. The Health Start program was begun as an experimental program by OCD in the summer of 1971 with two major components: health services and health education. Services were aimed at low income children under 6; 28 projects were funded at a total level of $800,000. Screening and testing of all children was to be followed up by appropriate treatment, plus health education; the latter goal was supported by a new Bio-dynamics health education curriculum package.

An interim analysis of the Health Start program (Nay, Vogt, and Wholey, 1972), begun in the summer of 1971, gives some interesting figures on screening and examinations. The 28 Health Start projects used a variety of techniques to detect health problems, from multi-phasic screening to full physical exams; the eligible children were all under the age of 6 (and over 52% were between 3 and 5). Of a total of 6,432 children for whom data were published, 69% had received medical examinations by December 1971 and of those, 66% required no medical treatment.

In their report, the authors note an unresolved issue in the Health Start program which is a critical one for all "screening and treatment" programs aimed at disadvantaged groups. They ask about goals and the relative priorities among the possible alternatives:

(1) returning children with health needs to a status of basic health,

(2) developing ways to ensure continued access to health services for children,

(3) developing ways of coordinating HEW health service and delivery programs.

It would appear that the particular value of screening (or some sort of general examination or testing) at the present time relates to goal (2). Goal (1) requires a full-scale comprehensive health program, while goal (3) is more of a regional administrative matter. At this point in our discussion it is useful to proceed to the next group of programs, which often include screening: the multiservice programs.

Multiservice Programs

This category includes what are normally referred to as "comprehensive" child development programs. Typically such projects are intended to bring the benefits of various child-oriented disciplines to the child through coordinating or multiservice centers. The intent is to take care of the whole child, without unnecessary and wasteful compartmentalization of his problems.

Because the health components of existing "comprehensive" child programs (Head Start, Parent-Child Centers, Follow Through) have in fact been secondary to their educational goals, we will not describe those programs in any detail at this point (descriptions can be found in Chapters 7, 8, and 10). The health component of Head Start has been described by Hunter (1970). The fundamental problem that these projects and even more traditional ones such as school health face is that of leverage. Funding levels are rarely adequate to allow a project to provide internally or from its own resources all of the care necessary to carry out its mandate of comprehensive care. It is this linkage to the child's ultimate health status, by either providing care or by assuring access to other services, that is the only rationale for screening or for including health problems among the concerns of a child development project. The seriousness of the problem is well illustrated by Health Start, which was supposed to capitalize on Medicaid regulation changes which require coverage for diagnostic screenings and tests for children under 21. It was this potential source of financial access to services which made the program look feasible; it was part of a conscious effort to encourage coordination and cooperation at the local level. However, as Nay, Vogt, and Wholey (1972) found, the desired cooperation never materialized. As a result, cost estimates proved completely wrong. The program had been planned to cost $75/child; the projects had an average funding of $86/child. However, the evaluator found that the range of services and components (e.g., health education) required by the guidelines could cost as much as $200/child, leaving projects with the huge and generally unfulfilled task of generating up to 60% of its funds from "cooperation and coordination" (Nay et al., 1972, p. I-2).

This study is valuable in that it provides documentation for a process which one suspects occurs frequently in the multiservice or coordinated service programs, although it has not been studied in Head Start or Follow Through. It also points out that screening, which is the first health service to be provided in multiservice programs, can take several forms, all of which should be further tested by controlled variation of models: multiphasic screening, mixed screening (from various sources), and full medical and dental exams (Nay et al., 1972, p. IV-4).

One of the benefits of multiservice interprofessional programs is the increased accuracy and completeness of the diagnoses made. In a study of the relationship between teachers' judgment of a health problem and physicians' recognition of one (Starfield and Sharp, 1971), one of the findings was that "in no instance did the physician diagnose a behavior problem . . . despite the fact that nine [of 35] of the mothers

Nutritional Programs

Of the 65 federal programs in our compilation having a purpose related to health or nutrition, 12 are purely nutritional or food distribution programs (including 3 non-service ones), and 8 more have nutritional components (provision of meals, service or education) among their secondary or optional mandates. None of the primary programs are administered by HEW; except for an OEO-CAP Emergency Food and Medical Services program, they are run by the Department of Agriculture. (See Table 11.1)

It is beyond the scope of this report to fully explore the workings of all of these nutritional programs. In fact, many major programs are not designed primarily as nutritional programs at all, but rather focus on surplus control and price stability; the USDA "has not traditionally had any general welfare objectives that go beyond the agricultural community". (Segal, 1970, p. 70) Since evaluation is a process of comparing stated objectives with results, it is not surprising that few studies of nutrition programs deal with social or health objectives.

The two largest programs by far are not targeted at children--Direct Food Distribution and Food Stamps. There is no breakdown on what portion of the funding for these programs serves children.

The National School Lunch Program is the largest nutritional program directed specifically ($861 million in FY 72) at children. A school lunch program, however, has no direct impact on those children previously shown to be at greatest risk of damage from undernutrition, those aged 0 to 2. It could have an indirect impact by freeing family resources to purchase more food for younger siblings of school age children, a dubious and uncertain "filter-down" process. This is a serious stumbling block for which no programmatic answers have yet been supplied. The Special Milk program, plus the spotty nutritional components of maternal and infant care projects and state maternal and child health services, are an attempt to provide perinatal supplementation; but the coverage provided by these programs is too uneven to be nationally or even regionally effective. It would seem that food stamps or other indirect routes are the only realistic way to reach these children at present. Even if universal screening or diagnostic and treatment centers were established, they would not necessarily provide the needed access since most children would be seen at such centers only once or twice a year at most. On the other hand, centers could provide meals to children who, on the basis of screening or observation, needed the food. The centers could also serve as a referral source to expanded food stamp or commodities distribution programs.

Another concern with nutrition programs, especially lunch programs, is that the simple eligibility standard of income may be an insufficient proxy for a more logically sound, but more pragmatically complicated, nutritional status standard. One study has found that between 25% and 42% of children with nutritional deficits (as measured by hematocrit levels and/or weight and height) were being denied free lunches in low income schools because they fell above the income cut-off lines.

> By ignoring simple medical indices in favor of family income or impressionistic considerations by school officials, many nutritionally indigent youngsters are excluded from participating in the school feeding program. (Paige, 1971a, p. 261)

TABLE 11.1
Nutrition Programs Affecting Children

Program	Our ref.*
Primary nutritional component:	
Emergency Food & Medical Services - OEO, CAP	132
Direct Food Distribution, USDA	141
Non-school Child Nutrition Program, USDA	142
National School Lunch Program (NSLP), USDA	143
Food & Nutrition Research - USDA	221 (non-service)
Food Research Grants - FDA, HEW	222 (non-service)
Food Stamp Program - USDA	224
School Lunch Program-Non Food Assistance Program (Equipment) - USDA	231
School Breakfast Program - USDA	232
Special Feeding Program - USDA	233
Special Milk Program - USDA	241
Extension Programs for Improved Nutrition - Federal Extension Service, USDA	532 (non-service)
Secondary or optional nutritional components:	
a) Meals	
Head Start, Health Start - OCD	91 (also nutrition education)
Follow Through - OE, HEW	92 (also nutrition education)
Demonstration in School Health	not listed
b) Services and/or Education	
Indian Health - HSMHA	102
Migrant Health - HSMHA	94
Maternal & Infant Care Projects - HSMHA	113
Maternal & Child Health Services (formula grants) - HSMHA	121
Children and Youth Projects - HSMHA	123

*Numbers in this column refer to page numbers in the chart in Appendix III B.

had mentioned 'a behavior problem' on the history form." The authors conclude that physician and teacher have complementary skills, "one in the form of refined diagnostic techniques applied at a moment in time, and the other in the form of relatively gross observation over prolonged periods of time." (p.187)

In an article generally critical of the value of routine school physical examinations, Eisner and Oglesby (1971) see a need for new case-finding techniques more productive than physician-performed exams. They suggest a combination of a selected battery of screening tests and observation of the child. "We believe," they conclude, "that the classroom teacher should become the focus of case-finding, and that the child's behavior and functioning should become the primary indicators of his health." (p. 242)

Cooper (1971) and Jacobsen and Siegel (1971) have also argued for a stronger coordination between schools and other health care providers, particularly in the sharing of information in both directions. Cooper describes a Children and Youth project, with a heavy stress on nursing services, which has developed a close relationship with its neighborhood school nurses.

Looking at the complementarity from the other side, McAnarney et al. (1971) found a very positive role for the pediatrician as a diagnostic specialist, coordinator of an innovative, interdisciplinary school health program, and consultant to the other team members and teachers on development and health curriculum matters. A large scale consulting and intervention program by psychologists on the staff of a psycho-educational clinic has reported much benefit to teachers in local elementary schools from clinical back-up services and case conferences in the schools (Sarason et al., 1966).

Sarason's work is particularly interesting because it stresses the use of consultation as a mode of coordination and because it demonstrates (although in a case study, not a controlled study) the improvements in behavior and awareness which can be achieved in both teachers and mental health workers by means of interaction but not absorption of either discipline by the other.

Unfortunately, as we noted earlier, the existing federal multiservice programs have not yet been studied in terms of the value to the child of the synthesis of health services with educational and social services. Therefore, while the expansion of school health service liaison networks can be suggested on the basis of the lack of effectiveness of school physical exams in terms of detection, treatment, or education (Yankauer and Lawrence, 1955; Yankauer et al., 1956, 1957, 1961) and the need to share information, there is as yet little evidence that truly integrated multiservice programs can in fact work.

The policy issue is whether free lunches are primarily an equity program for poor children (justifying an income scale), a nutritional/health program (justifying a physiological scale), or a combination effort. (It is interesting to note that this same dilemma has emerged in the M & IC program, where an original attempt to reach mothers and infants "at risk" both because of low income *per se* and because of medical high-risk conditions has evolved into a simpler definition of "high-risk" as "poor".)

As discussed in Chapter 6, estimates of need in nutritional terms are very difficult. (Segal, 1970; Elias, 1971) The "recommended daily allowance" figures are non-specific in their derivation (i.e., they are usually set well above laboratory testing levels of damage; Woolsey, 1971). Knowledge of this inaccuracy tends to conservatively bias policy-making, since it is difficult to justify the standards rigorously. The extent of need, using the standards, is probably underestimated, as Birch and Gussow point out:

> It would appear, then, that the really poor children, like their pregnant mothers, are not included in nutrition studies or "national samples" because they are not seen by doctors, because their families move about, or because their mothers either do not supply reliable data or do not return questionnaires.
> (Birch & Gussow, 1970, p. 230)

We share Birch and Gussow's skepticism about the reliability of culturally normalized methods of research when examining conditions basically outside the cultural norms. However, it would appear at this point that the new Health and Nutrition Examination Survey (HANES) now being completed by NCHS should provide better estimates, particularly on the status of persons served by federal programs.

One final question which could be asked of nutrition programs is their impact on learning. The evidence concerning the potential brain damage and permanent developmental consequences of maternal or early infant malnutrition has been surveyed in Chapter 6 (Elias, 1971; Birch & Gussow, 1970). It is highly suggestive but not conclusive. Extending the argument, Birch and Gussow (1970) go to great lengths to develop linkages between perinatal stress, subsequent malnutrition, and learning disabilities. We will not reiterate that argument here. On one level, they would agree with Charles Lowe of the National Institute of Child Health and Human Development (Lowe, 1971) that "There is a sound scientific basis for the hypothesis that the relief of malnutrition is a key element in modifying the incidence of mental subnormality." (p. 651) They go further to suggest, with others (Garvue et al.,1971), that functional learning behavior (paying attention, being alert, even attending school regularly), may be much influenced by a child's hunger or undernutrition.

We do not share all the convictions they base on their data. However, they themselves make two points which in effect strengthen the case for programmatic action without expectation of quick results. First they point out the factors militating against learning improvement:

> ...enviornmental equalization must be viewed as a longer term process, stretching across two or three generations at least, and we must not expect to overcome within a single lifetime the entire consequences of 15 generations of suboptimal conditions of life.
> (Birch & Gussow, 1970, pp. 268-9)

Then they stress, as Young (1971) does, the need to separate nutritional goals at least partly from wider social ones of education or welfare:

> The health of children and their nutritional status can be immediately improved. It does not matter whether such action produces an immediate improvement in educational performance, since the likelihood that it will hurt performance is zero.
> (*Ibid*., p. 272)

The school lunch program. This program reimburses public and non-profit private schools for up to 25% of the cost of student lunches of authorized quality; up to 15 cents per lunch additional is available to help defray the cost of free or reduced cost meals for indigent students. Because of this low matching ratio, free meals are often difficult for local school districts to finance. In fact, recently only 10.9% of school lunches were sold at reduced prices or provided free (Segal, 1970, p. 93).

A recent analysis of the National School Lunch Program (Young, 1971), by far the largest program targeted at children does contain some data which makes one cautious about the potential impact of current food programs. Young found that the percentage of all poor children participating in NSLP in 1968 (21.1%) was *less* than the percentage of non-poverty ones (25.6%). In other words, the program is not even reaching the neediest children--those to whom the nutritional value actually makes a difference, rather than merely supplementing calories that would otherwise be gotten from a home-prepared box lunch--to the same, rather meager extent to which it is reaching the non-poor. Determination of need is left to local schools; there is no nationally uniform test or scale (Segal, 1970, p. 93).

Young's analysis makes an even stronger point by developing various models for program operation, varying the degree of participation and of free lunch provision. He finds clearly that the present NSLP is not even the optimal program, given the allocation level. Providing meals free to all poor children in NSLP schools would result in increasing the number of RDA's (Recommended Daily Allowances) provided at *less* net cost. If, he concludes, one assumes unmet nutritional needs are worthy of being filled *per se*, then

> In terms of output per dollar it appears that the most effective program would be one requiring 100% participation of all schools and free meals for all poor children. This is contrasted with the present program which reaches about 33% of school-age children, of whom 13% receive free or reduced-price meals, i.e., only 2.4 million of the nation's 8.6 million poor school-age children are served.
> (Young, 1971, p. i)

Young's recommendations are reinforced by Kahn (1965), who recommends providing free hot lunches to all children. He refers for support to Swedish experience, where the administrative complexity and undesirable stigma found in a selective program led to a change to a universal meal system.

There are limits, however, to what one can expect even from a more comprehensive lunch program. First, as Young neatly diagrams it, if one looks at the total RDA's per child per year (one day's RDA X 365 X number of children), the NSLP provides only 4% of that total. Fifty-two per cent of the RDA's are allotted to non-school days; two-thirds of the remaining RDA's (= 32% of total) are not provided by NSLP because they represent breakfast and dinner requirements. Even if all children in school received NSLP, this would account for only 16% of their total annual RDA; a school breakfast program could increase that percentage up to a maximum of 32%.

One type of study which is urgently needed is a comparison between direct food programs of any sort and income maintenance as to their relative effectiveness in altering food purchasing patterns and nutritional status. There is a trade-off which needs to be measured between the universal coverage and freedom of choice which an income program would provide (e.g., reaching children aged 0 - 5 without requiring some new institution or intervention program) versus the directedness and immediacy of food programs.

> Efficiency and philosophy support the idea that in-kind programs are an inappropriate method of helping low-income households to improve their living standard...But because economic opportunity programs are not capable of immediately attacking the problem of inadequate diet, and because the poor may lack the motivation or knowledge to obtain a fully adequate diet, either with or without more income, it could be argued that even though food programs restrict freedom of choice, they are necessary as stop-gap measures to save young children from permanent physical and mental damage and to provide older children and adults with diets which give them the best chance of remaining healthy, alert people. The dangers of malnutrition may justify the temporary restriction of choice as a means to insure that recipients are healthy enough to take advantage of programs aimed at permanently improving their opportunities to choose.
> (Segal, 1970, p. 73)

Family Planning Programs

Family planning services are provided under several federal programs, and are directed toward adults; we will consider them as a group. Federal monies are provided under five project grant programs:

OEO Family Planning Projects	131
HSMHA Family Planning Projects	111
Maternal and Infant Care Projects	113
Neighborhood Health Centers (OEO)	133
314(e) Health Services Delivery Projects	(now Family Health Centers);

Two formula grant programs:
Maternal and Child Health Services 121
Comprehensive Health Planning (314a and 314b);
and under two reinbursement (vs. service) mechanisms:
Public Assistance (Title IV-A)
Medicaid.
These are programs which are authorized to provide family planning services; in many cases it is not known how much money, if any, is spent on family planning. The first two programs, which are devoted completely to family planning, had a total of $51.0 million authorized in 1972, divided fairly evenly between them. Children and Youth Projects, although not specifically mandated to do so, often provide family planning services and contraceptives for teenagers.

Assessments of family planning services usually deal with numbers of women reached, numbers of women continuing contraception, and with the quality of services and the mode of delivery--i.e., whether Pap smears and gynecological exams are provided, or whether neighborhood outreach workers are used as contacts. While this kind of information is valuable of itself in order to monitor the delivery of family planning services, it does not tell us much about the usefulness of family planning as a preventive health measure. Birth control as a preventive health measure has been interpreted broadly to mean

1) the voluntary prevention of unwanted births to high risk mothers as a means of reducing birth defects, mental retardation, genetic abnormalities, and maternal and infant mortality, and

2) the voluntary prevention of unwanted births to families that do not have the means or the desire to care for more children, reducing financial and emotional stresses so that existing children can be better cared for.

Thus it is sometimes argued that family planning will reduce child abuse and neglect, and that it will reduce the degree of poverty and thus lessen the mental and physical health risks of poverty for children.

Aims for family planning programs other than preventive health ones--such as population control or stability and creation of new opportunities for women--will not be discussed here. They are not only beyond the bounds of this study, but we also believe that a confusion of aims in birth control programs, particularly the current confusion of population control with preventive health, lessens the acceptability of birth control as a health measure. Thus charges of "black genocide" are made against birth control programs and much suspicion arises when family planning centers are set up in neighborhoods that do not already have access to adequate health facilities. (Gray, 1971)

Although most family planning programs have stated aims of improving the health of mothers and children and of allowing families to plan childbirth to their own satisfaction, most research and evaluation in this field is concerned with fluctuations in the birth rate, rates of acceptance and continuance of contraception, or with studies of preference for various types of contraceptives or modes of service delivery. There is therefore relatively little research to document the connection between birth control and child health. It is inferred from other perinatal evidence that voluntary family planning could prevent many birth defects and reduce the risk of maternal and infant death, but there is little evidence to show positively that family planning programs have had this effect. Infant mortality, for example, has declined most in those states which have the highest concentration of Maternal and Infant Care projects (U.S. DHEW, 1970). We need to know whether this decline is attributable to prenatal care, nutrition, birth control, some combination of these, or other factors outside the projects (such as demographic shifts). A sharp decline in maternal and infant mortality in New York State has been attributed to the liberalization of abortion laws there. Detailed studies have not been published, but it is the kind of information which is needed in greater quantity to judge the effectiveness of contraception and abortion as preventive health. Similarly, there is testimony that family planning can reduce family stress, but little reliable evidence to show that child abuse and neglect decline because of family planning.

In order to judge the magnitude of benefits (in terms of child health only) that would accrue if effective contraceptives and information were available to all women, we must know first, how many women do not now have access to contraceptive services because services do not exist, because financing mechanisms do not cover payment for them, or because services are "inappropriate" and thus shunned by potential clients; and second, how many women would "plan" their families so as to prevent the risks outlined above if contraception were truly accessible. The first question is the standard one of need for services. The second is a problem of motivation for contraception, as it affects child health.

Need for services. The most extensive study done (OEO, 1968) found that 5.36 million women were in need of subsidized family planning services; of these, 773,000 were receiving services. This estimate of need has been criticized, however, on the grounds that it includes many women who neither need nor want birth control (Blake, 1969). Estimates of "unwanted" births provide another way to look at the need for services. Westoff (1969), examining data from the 1965 National Fertility Study, found that 22% of births were unwanted by at least one partner. (This amounts to 5.9 million pregnancies.) Forty-two per cent of all births in the "poor" population, and 26% in the "near-poor" population, were unwanted.

If these estimates are correct, a substantial impact on child mental and physical health could be expected if all couples had access to contraceptives and practiced "family planning". The population most at risk of birth accidents (poor and black) is for the most part the same population that does not have access to family planning services (Yerby, 1966; Collver, Have, & Speare, 1967).

Motivation for contraception. In order to judge more fully the potential preventive impact of family planning on child health, it is necessary to know whether families with access to contraception use it in such a way as to enhance child health. This problem arises because of the voluntary nature of contraceptive services; the emphasis has been on providing access to these services so that people can make their own decisions about childbirth. Some writers, particularly those concerned with population control, argue that public goals (such as population stability) cannot be met even if all families practice voluntary birth control (Elliott et al., 1970).

Not much is known about whether families practice birth control specifically for the health of their children. Rainwater (1966) found that a primary rationalization for having few children is that parents feel they can better provide for a few. Blake et al. (1969), in a sample of poor families, found that respondents rated prevention of overcrowded housing conditions and better provision for existing children as important motives in contraception. Concern for the health of mothers and concern for the economic benefits to the family were rated as much less important.

While there is some reason to believe that people's motives and thus their practice in birth control will benefit children's health, attitudes about family size and motivations for child-bearing are extremely complex. As Rainwater (1966) has shown, husband and wife may often not agree on matters of family planning, and motivations for pregnancy may be unconscious. Furthermore, as Wallace and Gold (1970) note, experience with family planning in developing countries suggests that it is not until health care is sophisticated enough to assure that most children will survive that parents begin to accept family limitation. Religious prohibitions against birth control also limit its acceptance, although, apparently, less and less (New York Times, May 39, 1972).

It is difficult, then to determine just how much improvement could be expected in child health if voluntary contraception were to be extended to the entire population. The extension of these services on the grounds of equal access to preventive medical care is, however, in no way contraindicated by these findings.

Other Efforts to Analyze Child Health Care Programs

Concurrently with this report, major reviews of child health care are being undertaken by other groups with specific mandates in this area. Since this study is focused both more broadly (in that it is primarily concerned with educational and developmental programs) and more narrowly (in that it is not designed to look comprehensively at the health care delivery system for children, but only as that system relates to child development), the work of these groups is not repeated here.

The most directly relevant group is the Child Health Care Policy Task Force, an HEW group organized by the Office of Child Development at the request of the Secretary's Office. Outside assistance has been provided by Minnesota Systems Research, Inc., a well-known health research unit which is also doing long-range monitoring and evaluation of Children and Youth and Maternal and Infant Care programs. The summary report of the Task Force (April, 1972) indicates that the main purpose of the study was twofold: first to gather information about the 16 major current DHEW programs affecting child health and planned legislation, and second, to discuss four primary policy issues which have to be faced in developing a comprehensive departmental policy. The information provided is organized around seven questions:

1) What health needs are existing or proposed programs trying to meet?
2) What services are provided?
3) What are the eligibility criteria for receiving services?
4) What are the financing mechanisms?
5) What are the standards for services?
6) What are the delivery mechanisms?
7) How will various systems interrelate?

The four policy issues discussed are argued at some length, with alternative strategies being proposed and analyzed are:

1) benefits,
2) resources,
3) manpower, and
4) management.

The 16 programs covered were:

HSMHA:
  Title V (Social Security Act) Programs:
    Maternal and Child Health Services
    Crippled Children's Services
    Children and Youth Projects
    Projects for Dental Health of Children
    Maternal and Infant Care Projects
    Indian Health Service
    Section 314(e), Public Health Service Act
      (comprehensive health centers for all ages)
    Family Health Centers
    Migrant Health Act

OCD:
    Head Start
    Health Start
    Parent and Child Centers
  Social and Rehabilitation Service:
    Title XIX (Medicaid)
  Office of Education:
    Follow Through
    Title I (ESEA)
    Demonstration Projects in School Health & Nutrition Services

Descriptions of these programs, plus full outlining of the services either required or possible under each, are summarized by Minnesota Research Systems, Inc. (1972) and Child Health Care Policy Task Force (1972).

The major contributions of this study, as we read it, are its development of estimates of the numbers of children eligible under present and proposed programs and the numbers of children in need of those services. These estimates have been broken down for the different age levels (so that those under 9 can be isolated; the study goes up to age 21) and are made for a number of specific services:

--immunization
--screening
--diagnosis
--treatment
--rehabilitation
--emergency

The analysis provides estimates of the number of children who need the specific service (broken down by age, prenatal to 21); those served by existing programs; and an impression of the amount of overlap among those programs.

The report also provides some very useful data on the 16 programs studied--for example, the extent to which Maternal and Infant Care projects are not getting to the highest risk groups they were meant for is nicely documented. On the whole, however, the report leaves more questions unanswered than not. There are several reasons for this.

First, as is apparent from the list of questions asked about each program, the entire analysis is input-oriented. No questions are raised about the efficacy or outcome of any of the programs, other than the use of proxy variables of service units to represent outcomes (i.e., treatment is assessed not from the standpoint of the child's health but from the range of services potentially renderable).

Second, in developing the estimates of the gaps in the health needs of children, the study makes little attempt to attach priorities to these gaps or to understand their interrelatedness. Presumably, some of the policy issues which have been assigned for further study will be further developed along these lines.

Third, the study only covers 16 programs. This is not even all of the DHEW programs for health which affect children, although they are the major service ones. But there are also many in Agriculture or HUD, as well as several other health related programs, which are of vital importance. The Task Force does not deal with programs in nutrition, mental health or health education. This is not to fault the group for what it has chosen to cover; however, for the purpose of making policy level trade-offs among alternative approaches to improving child health, such omissions make assessment of the relative merit of filling the gaps outlined here versus filling other gaps elsewhere extremely difficult.

Another group which is taking a broader look at some issues of vital concern to children is also an HEW study group on the Delivery of Ambulatory Health Services to the Poor. This group is at a preliminary stage of its work but, according to a draft outline (Falkson, 1972), will be looking at current services for the poor, health status of the poor, utilization and health behavior patterns, analysis of current federal efforts, assessment of the role of government in providing services, and management and organizational issues. The results of this analysis should be particularly important in synthesizing programmatic and research findings on these topics, on clarifying issues of access (particularly financial) and utilization, and in developing priorities and strategies for delivering ambulatory care. This is especially important for children, since as noted in Chapter 6, the majority of child health needs can be best met in ambulatory settings; and yet such care is infrequently insured or paid for by private or public programs.

Conclusions

All 65 of the Federal programs related to child health or nutrition have not been described; however, with the exceptions noted below, the major service programs have been dealt with. It is not the function of this study to relate training, research, construction or other such programs to outcomes of child health; these make up half (33) of the programs.

The major programs not fully discussed are listed below with explanations for their omission.

Medicaid, by far the largest federal contributor to child health in terms of dollars spent, is a financing mechanism, not a service one. It also covers many people other than children, and data are not readily available pertaining to young children. Medicaid served around 9,000,000 children in 1972. Some of these may have received complete thorough care; others may have been covered only for an emergency room visit. Medicaid cannot guarantee coverage or quality of care; furthermore, the scope of the program, in terms of services covered and eligibility strictness, varies considerably from state to state. A full discussion of Medicaid belongs in an analysis of financing systems and insurance programs. We can only refer again to the work of the Child Health Care Policy Task Force (1972) which has reviewed the pros and cons of Medicaid and proposed national health insurance schemes.

Maternal and Child Health Services, Crippled Childrens Services. These two programs, which amounted to a total of $121,000,000 of federal formula grants to states in FY 1972, are clearly of vital importance in providing health services to children. However, because they have only minimal guidelines they are state-controlled programs for which no reliable national data exist on coverage, eligibility requirements, program content, or outcomes. At the present time, an attempt to develop a uniform data base and analysis of these programs is underway by a group at George Washington University. We can only note that such lack of accountability is difficult to justify when every health dollar is being claimed by numerous programs. We are particularly concerned that some if not most of the funds (at least in MCHS) would not be better spent in expanding the coverage of programs with more demonstrable effects on child health--such as Maternal and Infant Care projects or Neighborhood Health Centers.

Dental programs have been omitted due to the pressures of time, not because we consider them unimportant. When only half of all children under 15 have even visited a dentist, the level of need is enormous, and present levels of federal support are woefully inadequate; in FY 1972 comprehensive dental care projects were expected to reach only 15,000 children.

Indian Health and Migrant Health programs have also not been discussed. Again, the lack of evaluation studies, or even comprehensive descriptive ones, hampers program analysis. In this case, the overwhelming impression one receives of these programs is their inadequacy in the face of tremendous need (American Academy of Pediatrics, 1971; Adair & Deuschle, 1970). What is needed first is sufficient funding to reach enough children in a concerted enough way to make outcome evaluation meaningful.

Having reviewed what has not been fully discussed, we can return to summarizing our findings concerning service programs. To do this, we want to see to what extent the matrix proposed at the beginning of this chapter, mapping child health programs against child health needs, has been filled in.

The discussion may be clarified by presenting a summary of the acute health problems of children at different ages as seen by pediatricians (American Academy of Pediatrics, 1971). They separate the health characteristics of the early years into four subgroups:

1) Neonatal Period (0 - 1 mo.). During this period the child is at great risk from many acute conditions, some the result of perinatal complications or congenital defects, and some due to the environment--the newborn nursery or the home.

2) Infancy (1 mo. - 2 yr.). This is the period of most frequent acute illnesses while the child is also achieving greater control of immunological, physiological, and biochemical functions. Some of the common acute conditions may cause permanent impairment (or death) if not prevented or treated speedily: acute respiratory infections, otitis media (frequent cause of permanent hearing loss in medically underserved areas, acute infantile diarrhea, pneumonia, and acute bacterial meningitis.

3) Preschool (2 - 6). Acute illnesses occur less frequently in this period, partly because of the child's immunities developed earlier. Acute contagious diseases (as the child tends to mingle more with his peers), accidents, and poisonings are all at peak frequencies, however.

4) School period and adolescence. Children are generally in better health than earlier. Chronic diseases (rheumatic fever, diabetes, etc.) often begin to appear now, but at incidence rates much lower than childhood acute conditions.

By definition, chronic conditions and handicaps do not display the same patterns of age-specific immunity or absence that acute conditions do. Patterns seem, however, to be pointing toward an increase in the number of children whose condition is congenital or from birth, rather than acquired during childhood (e.g., congenital blindness vs. blindness by trauma) and whose problems are multiple. There is some indication that prevelance patterns in later childhood may be altered by screening and treatment in the early years (Joint Commission on the Mental Health of Children, 1970; Maternal and Child Health Programs, 1966).

Finally, there are behavioral problems, which are related to health needs but about which less is known in an epidemiological sense. What we do know is that pediatricians are not presently trained to nor do they routinely perform adequate psychological or behavioral diagnosis in early childhood (Werner, Bierman & French, 1971; Kleisinger, 1971; Starfield & Sharp, 1971). Hence there is a need for some other mechanism to achieve such diagnosis.

Looking now at existing programs against these patterns of need, we find very spotty coverage of the matrix. Some programs, such as Maternal and Infant Care and Family Planning, are directed at both critical health needs and high risk groups in a most appropriate way. Some programs which do not now exist in a coordinated way, such as early diagnosis and treatment for handicaps and chronic conditions would, from evidence from other sources, have a large impact on the matrix (i.e., intervening between the critical years of 1 and 4). On the other hand, some programs are not organized in such a way as to make evaluation in terms of the matrix possible. Children and Youth, for example, combines early infancy care with some screening with general services for older children without a programmatic mandate to apportion inputs in these areas in relation to priorities of critical health needs. (This is not to say that some projects have not allocated their own resources after careful consideration of local priorities; such analysis, however, have not been systematically reported). Other programs with potentially large impacts seem to be skewed because their programmatic goals are not entirely consistent with child health needs. Thus, many of the feeding and food distribution programs do not address the issue of feeding very young children (for whom the dangers of malnutrition are particularly severe). Looking further, we find gaps in which no programs seems presently operating, and no evidence of non-federal models. One is that of combining medical, psychological, and educational diagnoses and treatments; the failure of Head Start and Follow Through to become truly integrated and comprehensive does not bode well for the newer Parent-Child Center projects. Another is the whole area of social illnesses in children (child abuse, neglect, accidents).

We conclude by expressing our dissatisfaction with the amount of information which we have been able to gather about child health programs. We have by no means exhausted the literature and yet we have surveyed it and found the analytically useful material so scattered and so unrelated that it is difficult, if not impossible, to pull together a picture of what child health care for disadvantaged children is in fact like today.

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Appendix IIA

Effects of Desegregation

There are many reasons why people may favor the elimination of racial segregation in the public schools. These reasons are often based on beliefs about the special harm racial segregation causes to minority students and on the expectation that school integration will eliminate the effects thought to be associated with segregation. Such beliefs are frequently accompanied by notions about how and why racial segregation and integration affect students. Of course, not all beliefs about the value of racial integration refer to specifiable outcomes for individuals. Racial separation in public institutions may be viewed as contrary to the ideal of a racially mixed democracy. The Federal courts have based anti-segregation decisions on both the harm presumably associated with racial separation, and on a Constitutional presumption against racial distinctions in public institutions.

However, proponents of integration for moral purposes tend also to accept the "educational" arguments for ending racial isolation in the schools. In a study of civil rights leaders in more than 90 cities, reported in 1970, 50% of the respondents indicated that a most important reason for school integration was that segregation was morally wrong. Only 23% reported that a most important reason to desegregate was that black students would learn more in desegregated schools. Still, 88% of the respondents expected that black students would learn more if they went to school with whites. Sixty-four per cent of these held this expectation because they felt the quality of schools with whites was higher. Thirty-two per cent of these felt that desegregation would reduce black feelings of inferiority and would thus result in increased learning by black students (Kirby, 1970). Surveys of black parents and black students also confirm that integration is valued as a means to educational ends. In interviews in 1965-66 with mothers of children participating in Boston's Operation Exodus, 88% of the respondents gave better education as the reason for their child's enrollment in the program (Law and Education Center, 1972, p. 546). Of the students interviewed in a study of Boston's METCO program in 1970, 75% reported that they would have preferred to attend schools in their own community, if such schools had been equal in quality to suburban schools (Armor, forthcoming., p. 41).

Desegregation, then, is pursued in substantial measure as a strategy to improve the education of black students, and to reduce the disparity between average black and white achievement. It is important to ask what such a strategy is likely to accomplish in educational terms. The question is far simpler to pose than to answer. It is not clear which educational outcomes provide the most useful test of the success or failure of desegregation. Research usually reports the effects of desegregation on various standard achievement tests. They rarely indicate the relevance of such tests to academic grades, track placement, or college attendance. These latter may well be the more important educational outcomes, and research should focus more directly on them. The determinants of any educational outcome are difficult to specify and to measure. Coleman's finding that the strongest determinants of school achievement lie outside of the school has not been refuted. School factors that might affect achievement are confounded, so that the unique effects of specific factors cannot be ascertained. This means that research does not result in clear policy implications.

Finally, there has been little test of the proposition that school integration will reduce racial educational inequality. Coleman's massive survey was undertaken at a time when few black students were in schools with substantial numbers of whites. Moreover, the EEOS and its re-analyses, as well as small surveys, suffer from the inherent defects of cross-sectional research. Apparently comparable groups--e.g., black students in integrated schools and black students in segregated schools--may well differ systematically on some unmeasured and uncontrolled factors which affect achievement. Existing longitudinal studies of students undergoing the change from segregated to desegregated schools, and tested at more than one point in time, are few in number, and are not nearly as sound as their authors would have us believe. So-called "busing studies" have involved a very few atypical communities with, for the most part, non-random selection of student participants and inadequate control groups, and have covered short periods of time. The limited extent of desegregation until very recently, the complexity of specifying a model of educational outcomes, and the methodological shortcomings of present research leave us very uncertain in our predictions about the effects of school desegregation.

Still, we do know something about the difference in educational outcomes between students in segregated and desegregated schools. And we can make attempts to relate these differences to the extent and duration of racial isolation in school. For the purposes of public policy, it is important that we attempt to identify those factors which differentiate integrated and segregated schools, and which are associated with the educational progress of individual students. This will help us to make judgments about the likely impact of desegregation on presently segregated students, and about the possible effects of alternative educational strategies in racially concentrated schools. If it is the case that black students in integrated schools are very different from black students in segregated schools, and if the effects of such differences cannot be controlled, no inferences to the effects of future desegregation can be made. If it is the case that desegregated schools differ in tangible resources, and that these resources affect achievement, then a strategy of resource augmentation in segregated schools may have educational merit. Finally, if it is the case that desegregated schools differ in unreplicable ways from segregated ones, and if those differences relate to important outcomes, a strategy of desegregation for educational reasons is implied. The following discussion considers the effects of desegregation on school achievement, and on attitudes, perceptions, and behaviors which are thought to bear on achievement and on adult life.

Black students in desegregated schools and classrooms perform better on standard achievement tests than do black students in segregated educational settings. That much is known. This is true for both the elementary and the secondary levels. In 1965, black sixth graders averaged two standard deviations below whites in verbal achievement. However, black sixth graders attending integrated schools were only one and one-half standard deviations behind (Armor, 1972, p. 223). In the urban North, black sixth graders in schools which were from 50-75% white averaged three points higher than the black mean on the four EEOS achievement tests. Students in majority black schools were five points below the mean (Jencks, forthcoming, p. 200). Black students in overwhelmingly white schools (75-90% white) performed at the black mean, suggesting that there may be a point at which white predominance may no longer be favorable to minority performance. The performance of black sixth graders in desegregated schools is particularly impressive, because in those same schools black first graders performed below the black mean. Assuming that present sixth graders started off similar to present first graders, we can argue that desegregated blacks "gain" more than blacks in majority-black and overwhelmingly white schools. Table I shows the "gains" of black sixth graders from first to sixth grade in schools of varying racial composition.

TABLE I

"Gains" of Black Northern Urban Sixth Graders on EEOS Tests (in standard scores by Racial Composition of School)

	Percentage of Whites in School				
	0-25	26-50	51-75	76-90	91-100
Sixth Grade Gain	-.030	.081	.327	-.315	-.100

(Taken from Jencks, 1971, addended tables)

In the ninth and twelfth grades, desegregated blacks outperform segregated blacks. In Northern ninth grades, the difference between blacks in mostly white classes and those in all-black classes on the EEOS verbal test was .43 standard deviations. In this case, one standard deviation is equal to 2.4 years in grade equivalents. This means that a mostly white classroom was worth slightly over a year in achievement level to a Northern black ninth grader (McPartland, 1968, p. 158). Northern black twelfth graders in mostly white classrooms averaged about five points higher in verbal achievement than their compeers in mostly black classes (computed from regression coefficients in Cohen, Pettigrew and Reiley, in Mosteller and Moynihan, 1972, p. 350). Finally, a survey of black adults which included a short verbal test found that respondents who had attended school with whites scored higher than those who had not (Crain, 1971).

Several questions may be asked about these results. First, what explains the association between integrated schooling and higher black achievement? Second, is the association uniform for all levels of grade, social class, and length of desegregation, experience? Are there special beneficiaries of desegregation? Third, how important educationally is the apparent desegregation effect? If desegregation worked as we might expect from these results, how substantially would it reduce educational inequality? And, fourth, how do the results of survey research compare to studies of induced desegregation? Does busing previously segregated students to integrated schools result in educational gains?

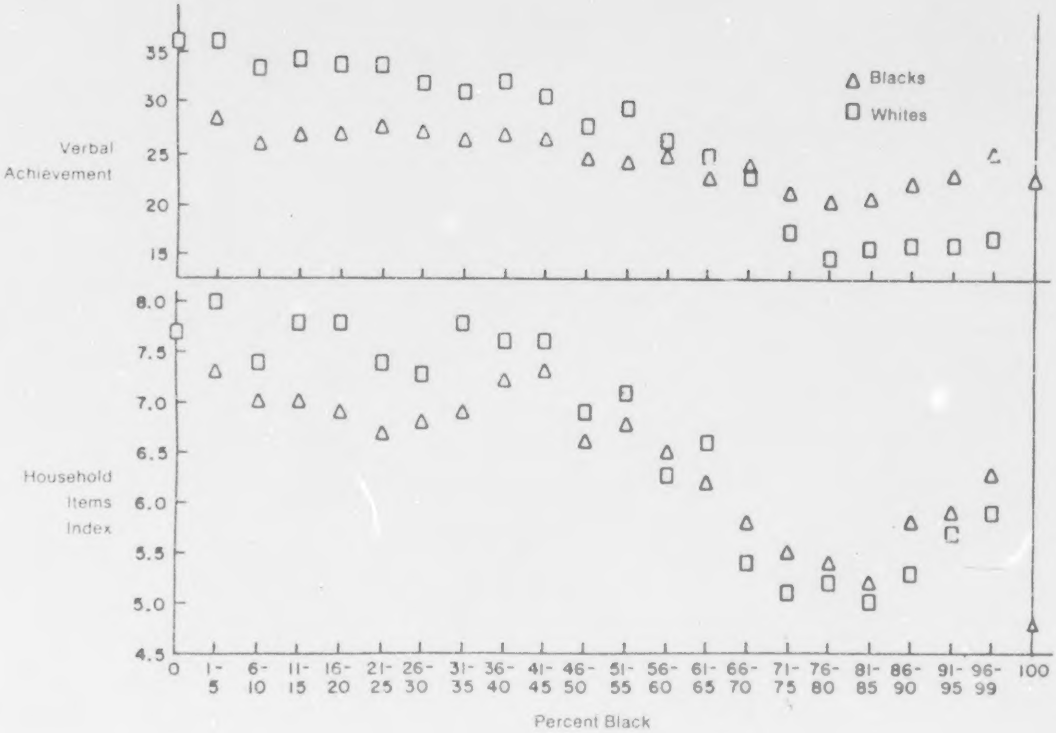
For the purpose of formulating educational policy, it is important to know what factors are responsible for the association between desegregation and greater achievement. It is probably even more important to know what is not responsible for the association. It is one thing to pursue a policy that has promise of working, even while uncertain about why it is working. It is another thing to pursue a policy based on spurious and misleading correlations.

Critics have argued that the association between integration and greater achievement is, in fact, spurious, and that black children in integrated schools come from more advantaged homes and have higher ability than black students in segregated schools. This argument must be met, because if it is true that desegregated students are relevantly different from segregated students, then integration policies may not at all result in expected gains. It is incontestable that black students in integrated schools in the mid-1960's were, on the average, from more advantaged homes and had higher tested initial ability. Moreover, family background is the single most powerful determinant of achievement. Figure I shows the distribution of family background as measured by the EEOS Household Items Index, and verbal achievement against school racial composition for the EEOS sample. For both blacks and whites family background and verbal achievement covary, and decrease as the percentage black increases, except at the extreme. (See Figure I.)

However, there is considerable evidence that the initial advantage of integrated students does not fully explain their superior achievement. In the North, black first grade scores were not nearly as different across schools of varying racial composition as were white scores. In fact, black first graders in schools 50-75% white started out below the black mean. The desegregation effect reported for sixth graders was with first grade scores controlled. Since the pattern of final racial difference was different from the first grade pattern--racial differences in achievement were narrowed for integrated blacks--it is hard to argue that initial differences explain the sixth-grade result. The most impressive evidence for the persistence of a desegregation effect that is independent of the initial advantage of most desegregated students, comes from Commission on Civil Rights re-analysis of EEOS data. The effect of classroom desegregation was found to hold for ninth-grade students of low social class, who were in low or medium ability groups (U. S. Commission on Civil Rights, 1967, I, p. 101). A similar finding is reported in a study of students in Richmond, California, reported with the Commission's re-analysis of Coleman. Within all parental occupational categories, black students in integrated schools scored higher on the eighth grade DAT Verbal Reasoning Test than did non-integrated blacks (Wilson, 1967, p. 185). Finally, a further analysis of the EEOS ninth-grade sample found that the positive effects of classroom

FIGURE I

Average Verbal Achievement and Household Items Index
by Per Cent Black, for Blacks and Whites



(Taken from Armor, 1972, p. 227, Figure III) desegregation were not diminished by controlling for program of study or ability group (McPartland, 1968, p. 172). These results are extremely important, because they mean that the apparent effects of desegregated schooling cannot be explained away by the student characteristics which have been measured and analyzed. These include measures of parental social class and of early ability. There is, of course, the possibility that the measures which were used are crude, or that desegregated students differ on some unmeasured characteristics from segregated students. However, the burden of proof should lie with the critics who advance the selectivity argument.

What, then, is different about desegregated schools from segregated ones that might explain the higher achievement of integrated black students? It is tempting to propose that white schools possess more educationally effective resources than black schools, and that access to these resources accounts for the achievement gains associated with desegregation. This would accord with common belief, and would suggest remedies to educational inequality that are politically less hazardous than school desegregation. Equal resources could be made available to segregated schools. There is, however, no evidence for this position. Re-analyses of Coleman have confirmed the still startling finding that black and white schools differ only slightly on educational resources, and that these differences do not account for difference in achievement (Jencks, 1972). The Commission's report directly tested the hypothesis that differences in teacher quality between white and black schools accounted for the achievement differences between integrated and segregated black students. It found that the desegregation effect was independent of differences in teacher quality (U.S. Commission on Civil Rights, 1967, pp. 96-98). However, the Commission's index of teacher quality excluded the teacher's verbal score on the survey test. Still, further re-analysis of the EEOS data showed that classroom teacher quality as measured by the survey verbal test did not alter the finding that black achievement rose with increases in the classroom percentage white (McPartland, 1968, p. 276). In Crain's survey of black adults, a school quality index did not explain any of the verbal test difference between respondents having had desegregated and segregated schooling, and it explained only a small fraction of the differences on educational attainment (Crain, 1971, p. 17). Differences in school facilities and teacher characteristics--at least insofar as they have been specified and measured--do not account for the apparent effect of desegregation.

While the Coleman Report concluded that variation in school resources did not explain achievement differences, it did find that there was a school factor which was significantly related to student achievement. That was the average school social class composition. Students, independent of their own social class background, scored higher when they attended higher class schools. Moreover, the impact of social class composition has been found to be higher for blacks than for whites (Wilson, 1967). Since white schools are typically higher in class composition, most analysts have agreed that the effects of racial desegregation on black achievement are, in fact, the effects of social class integration (Jencks, forthcoming, p. 189). This finding has led to a number of results. One is the assertion of the argument that racial integration really isn't important. This is an unconvincing argument because there are not enough middle-class blacks with whom poor blacks can be integrated.[1] If it is important that poor blacks go to school with middle-class students, then it is important that they go to school with whites.

It is true, though, that if this finding is correct, then it would not educationally benefit poor blacks to go to school with equally poor whites. The debate about whether the apparent effects of desegregation are racial or class effects, then, is not entirely academic. Different policy measures are implied by different answers. There is evidence that there is educational benefit associated with social class integration. The Civil Rights Commission found that for Northern twelfth graders at each level of individual and school social class, there was over a year achievement differential between students in majority white classrooms and those in majority black classrooms. (See Figure II) Reanalysis of the EEOS ninth grade sample showed that the effects of classroom social context and classroom racial composition were of comparable magnitude and were additive. (McPartland, 1969, p.282) Finally, regression analysis of the EEOS Northern sample has shown that there is a remaining effect of school racial composition after school social class and school quality have been controlled. For sixth graders, the Beta of school racial composition on verbal achievement was .094. (Cohen, Pettigrew, Reiley, 1972, p. 350), indicating that a one-percent increase in percent white was associated with about an increase of .03 points in test score. This implies that the change from a predominantly black school (e.g., 60% white) is worth about 1 point in verbal achievement, irrespective of school social class. These findings are suspect, because the measures of school social class were rough. Finer measures of social class might well capture what now appears as a racial *per se* effect. Such new findings would not, however, reduce the estimates of the benefits associated with integration. They would simply explain the source of those benefits.

Do the benefits of school desegregation reported in survey analyses accrue equally to all black students? We would like to know answers to such questions as: Does desegregation help very poor black students as much as it helps moderately advantaged black students? Does desegregation affect different aged students similarly? Does the length of the desegregation experience affect achievement?

As we noted earlier, the desegregation effect holds for lower class students in low and medium ability groups. There is evidence, though, that the effect of desegregation is least for lowest class students and greatest for higher class students. When the difference in verbal scores for

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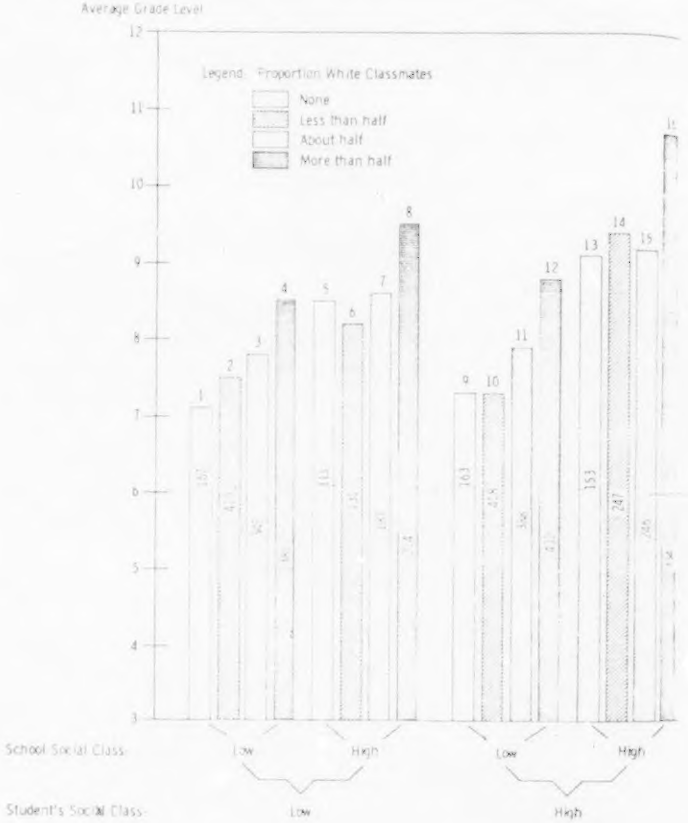
[1] In Wilson's survey, the correlation between school, racial, and social class composition was .77.

FIGURE 11

Average Grade Level Performance of Twelfth Grade Negro Students by Individual Social Class Origin, Social Class Level of School and Proportion White Classmates Last Year, Metropolitan Northeast



(Taken from U. S. Commission on Civil Rights, 1967, I, p. 90) ninth graders in the EEOS between students who began desegregated schooling in early elementary school and those who have never experienced desegregated schooling are analyzed, the greatest benefits are achieved by the highest class students and the least benefits achieved by the lowest class students (McPartland, 1968, p. 188). (See Table II)

TABLE II

Difference Between Segregated and Long-Term Integrated Black Ninth Graders in Verbal Achievement by Individual Social Class

	Social Class Level					
	1	2	3	4	5	6
Achievement Differences	6.62	11.29	9.52	8.39	12.24	11.46

The pattern is not exact, and even for lowest class students there is a substantial effect. When the scores of Northern ninth graders are considered, not taking into account length of desegregation, and employing a cruder index of social class, higher class students benefit more, but there are no substantial differences between middle and lower class students. (U. S. Commission on Civil Rights, II, 1967, p. 82) (See Table III)

TABLE III

Average Verbal Score of Black Northern Ninth Graders By Parents Education and Proportion of White Classmates Last Year

	Percent White Classmates Last Year				
Parent Education	None	50	50	50	4-1
HS	256.43	258.91	259.58	263.54	7.11
HS	256.41	258.03	258.97	262.37	5.96
HS	262.98	265.65	264.72	271.74	8.76

The gain from an all-black class to a majority white class is about the same for students whose parents completed high school or who completed less than high school, 5.96 and 7.11. Students whose parents completed high school "gained 8.76 points. Desegregation, then, appears to benefit students from all social classes, but benefits relatively advantaged blacks somewhat more.[2]

We have seen earlier that controls on ability group or program of study did not diminisn the effect of desegregation. Students score higher in integrated classes, whatever the academic level of the class. There is one exception to this Black students in integrated classes in predominately black schools do not score higher than other students in those schools (McPartland, 1968, p. 115; Cohen, Pettigrew and Reiley, 1972, p.356). This seems to be because white students in black schools are especially economically and academically disadvantaged. (See Figure I, p.4a) This finding is consistent with the finding that it is the higher social class of white students in white schools that principally explains the beneficial impact of desegregation.

There is one other situation in which desegregation has no apparent benefit. This is when black students attend school with whites, but attend classes mainly with other blacks. There is no payoff to going through the school door with whites, unless that door leads to the same classrooms (McPartland, 1968, p. 109). Since the correlation between school and classroom integration is high (McPartland, 1968, p. 152), this distinction has not substantially affected research findings. It is, however, an important distinction for purposes of educational practice.

Are the benefits of desegregation different for different aged students? This question is important if choices have to be made between grades at which to implement desegregation. Unfortunately, the answer is not at all easily provided. Students at different grade levels have different desegregation histories. If the effects of desegregation are cumulative, then comparing students of different grades may be misleading. Further, the tests given at each grade are different, so only standard scores should be compared. These are not usually reported in the research. And finally, selective attrition undermines the comparability of older students with younger ones. The second two caveats apply as well to busing studies, in which all age students are experiencing desegregation for the first time. We will consider only the survey evidence here. The best comparisons are between the gaps between black and white students expressed in grade equivalents, for students in classes of differing racial compositions at different grade levels. These comparisons allow us to ask at which grade levels changes in classroom racial composition have the most impact. Table IV presents these comparisons for the Northeast sample of the EEOS.

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[2] See also McPartland, pp. 231-241 for similar evidence that there are some differential effects by social class, but they are modest in size.

TABLE IV

Racial Gap in Grade Equivalents by Classroom
Racial Composition and Grade

	Percent White Classmates Last Year				
Grade	None	50	50	50	Total
6th	-1.8	-1.7	-1.6	-1.5	-1.7
9th	-2.1	-1.8	-1.8	-0.9	-1.7
12th	-4.1	-4.1	-3.7	-2.8	-3.6

(Taken from U.S. Commission on Civil Rights, II, 1967, pp.50,67,73)

In absolute numbers, it appears that desegregation is progressively more effective the older the student. At sixth grade, the change from an all black to a majority white class reduces the racial gap by .5 grade equivalents. At ninth grade, the reduction is 1.2, and at twelfth grade the reduction is 1.3 grade equivalents. However, because the total racial gaps at each grade level are not equal, comparisons of absolute grade equivalents do not fairly assess the relative benefit of an integrated classroom. A better measure, that takes into account differing absolute gaps at different grade levels, is the proportional gain associated with the hypothetical change from a segregated to an integrated class. This can be expressed by computing the grade equivalent gaps for segregated and integrated classes as proportions of the total gap for a grade level, and subtracting the second from the first. The result is the proportional reduction in the racial gap associated with the "change" from segregated to integrated classes. Table V presents the results of these computations for the Northeast sample of the EEOS.

TABLE V

Racial Gap for All-Black and Majority White
Classrooms as Proportion of Total Gap at
Grade Level

	Percent White Classmates Last Year		
Grade	None	50	1-2
6	1.06	.53	.53
9	1.24	.76	.48
12	1.14	.77	.37

Our interpretation of these results is opposite from our interpretation based on absolute grade equivalent. We find that integrated black sixth graders are only half as far behind whites as are all black sixth graders. Integrated ninth and twelfth graders are three-quarters as far behind as are all black ninth and twelfth graders. The proportional "gain" associated with integrated classrooms is .53 for sixth graders, .48 for ninth graders, and .37 for twelfth graders. On the basis of these data, we conclude that the relative impact of classroom integration is greatest for younger students. We will return to this question when we consider the changes in test scores for bused children of various ages.

The clearest evidence that the apparent effect of desegregation is not spurious is that these effects are directly related to the length of time a student has attended desegregated schools. On this point the research is consistent and unanimous. The length of the desegregation experience appears to be more important than the present racial composition. In Wilson's study of Richmond, California, the achievement differences between students in presently similar schools but with different desegregation histories were greater than the differences between students with similar histories, now in schools of varying composition. Wilson found that the effect of elementary social-class school segregation on eighth grade achievement was twice the effect of junior high segregation, 8 percentile points versus 4 (Wilson, 1967, p. 188). The advantage of early desegregation is most pronounced when desegregation begins in the first three grades. For black ninth graders, desegregation in those grades appears to be worth about 3 points on verbal achievement, controlling for family background and present classroom racial composition. This compares to an advantage of only one or two points for earliest desegregation at grades 4, 5, or 6 (McPartland, 1968, p. 190). Earliest desegregation at grades 1, 2, or 3 appears to be worth about a half a grade equivalent for Northern ninth graders, controlling for individual and school social class. Earliest desegregation at grades 4, 5, or 6 is worth less than a fifth of a grade-equivalent. (See Figure III) The fact that desegregation has a relatively greater impact for younger students, and that early desegregation has a substantial impact on later achievement, suggests that the greatest long-term educational benefit can be derived from a policy which insists that desegregated schooling begin at the outset of a student's school life.

On the basis of survey data we have argued that the effects of desegregation are real; that they are associated principally, but not exclusively, with the social-class composition of white schools; that they hold for different kinds of black students; and that they are most pronounced for younger students and for students who have experienced long-term desegregation. We must now ask if the effects of desegregation are large enough to be considered educationally important.

This question is typically finessed by researchers favorable to desegregation. Comparisons are usually made between segregated and integrated blacks, which favor those in integrated classes. Such comparisons fail to ask what proportion of the gap between white and black students would be eliminated by the gains associated with desegregation. For example, McPartland reported that black ninth graders in majority white classes score about a half a standard deviation above blacks in all-black classes. He observed that this represented half of the one standard deviation gap between whites and blacks (McPartland, 1968, p. 158). The casual reader might well conclude that integration closes half the racial gap. The case is, in fact, quite different. Integrated blacks would score above the black mean of -1 standard diviation, segregated blacks would score below the black mean. The difference between the scores would be about 1/2 standard diviation. But the scores of integrated blacks would still be about 0.8 of a standard deviation below the white mean! Desegregated blacks would still be two-thirds as far below whites as segregated blacks. Other analyses, which have also taken into account the effect of individual social class bias on the apparent effect of desegregation, have come to similar conclusions. Cohen, Pettigrew, and Reiley found that their analysis of Northern black twelfth graders implied "that assigning Negro students to mostly white classes would raise their verbal ability about 1.94 points. That is less than one sixth of the difference between Negro and white achievement in these schools at grade 12 (Cohen, Pettigrew, & Reiley, 1972, p. 358). Summarizing the results of the available survey analyses, Christopher Jencks has concluded that "If desegregation raises black scores by 2-3 points, eliminating all predominantly black schools might raise black test scores by about 2 points" (Jencks, forthcoming, P.212). In 1965, the average black achievement score was about 15 points below the white average. This means that school desegregation would--if the survey results held under induced desegregation--eliminate about 1/7 of the racial achievement gap. Such a gain would be important, but it would not substantially change the pattern of racial inequality in education.

Up until this point we have been discussing the apparent effects of desegregation evidenced in cross-sectional research. Comparisons have been made between different students in schools and classes of varying racial composition. As we have already cautioned, such comparisons could be invalid if there are systematic uncontrolled differences between naturally segregated and desegregated students. The only sure way to find out what would happen if presently segregated students were to go to school with a majority of white classmates is to implement desegregation. A small number of communities which have bused black students to white schools have been studied. The research on the effects of busing is poor by any reasonable standard of rigor. Participation in busing programs is frequently voluntary, introducing the possibility of selective bias. Some studies had no control group of still segregated students. In others, the number of controls was a fraction of the number of bused students. In many of the studies the entire sample was tiny. There is no satisfactory study of the effects of busing.

Still, we must ask, do the existing studies of busing suggest any results which can be tentatively accepted? These studies are reviewed individually, elsewhere (St. John, 1970; Armor, forthcoming). Here, we will consider only the common direction of their findings. There is scant evidence of any gains in achievement test scores that can be confidently attributed to the effects of the change from segregated to desegregated schooling. Nor is there evidence that desegregation depresses black achievement. Experimental and control groups seem to gain pretty much the same over comparable periods of time. One important exception to this pattern is the results of the evaluation of the first two years of Project Concern in Hartford, Connecticut. Project Concern buses inner-city blacks to white suburban schools. Classes were chosen at random for participating in the program, so the results are less suspect than those in some other studies. Over a two year period, bused students in Grades K-3 showed statistically significantly greater growth in tested mental ability and in measures of school achievement than still segregated students. No such favorable difference was found for older bused students. This result argues favorably for our earlier conclusion that younger students more readily benefit from desegregation than do older ones.

What explains the failure of the busing studies to turn up consistent evidence for an effect of desegregation on achievement tests? Survey research seemed to suggest that such an effect would occur if previously segregated students were to attend majority-white schools. Do we have to abandon our expectation that school desegregation can boost black achievement? There are a number of reasons for thinking that the busing studies are not the last word on the probable long-term outcomes of desegregation. If the effects of desegregation are cumulative, as the survey results suggest, then there is little reason to expect a substantial effect to appear after only a year or two of desegregation. If desegregation has greater impact on younger children, then we would not expect busing studies of older students to yield impressive findings. Finally, a source of the discrepancy between the results of survey research and busing studies may be differences in the climates surrounding naturally occuring integration and induced desegregation. There is evidence that the degree of social integration and the degree of stigma are among the factors of desegregated schooling that are associated with black achievement (McPartland, 1968, p.335). It is fair to assume that black students bused to white schools will not immediately be fully integrated into school life, and will not immediately be freed from the stigma of strange interlopers. The atypicality of busing programs probably makes effective integration less likely than it would be under a policy by which busing were the accepted norm, and occured over a long period of time. Desegregation as a strategy to raise black achievement has simply not been given an adequate test. The results of existing research are no basis on which to abandon the strategy as fruitless. They are a basis, however, on which to consider carefully the conditions which must be met if school integration is to be effective. And they are also a basis on which to temper expectations that racial inequality can easily be remedied by transferring children from school to school.

Most of the research on school desegregation concentrates on test scores as the criterion variable. There are other academic outcomes which are important. One is grades. We have seen only one study which reports the effects of desegregation on grades. The grade point average of Juniors and Seniors in Boston's METCO Program fell from 2.34 in May 1969 to 2.22 in May 1970. The grade point average of the control group remained unchanged at 2.76. The higher average for controls can be explained by the higher level of evaluation that the bused students faced in white suburban schools. The decline in the bused student's average is more difficult to explain. There were 165 students for whom grade point data were reported, and only 23 controls. Grade average was self-reported, so the chances of erroneous reporting may have been higher among the bused students (Armor, forthcoming, p.23). There is little a priori reason to think that desegregated students grades will fall further, once they have initially fallen when students transfer from black to white schools.

The scores people have gotten on standardized tests are less strongly associated with adult occupational status, than is the number of years they have gone to school.[3] Therefore, we should like to know if school desegregation has an effect on black educational attainment. The evidence is mixed and certainly not definitive. In Crain's sample of Northern black adults, respondents who had attended integrated schools had a high-school drop-out rate one-quarter less than those who attended segregated schools. Blacks who had attended integrated schools averaged a half year more schooling than blacks who had attended segregated schools (Crain, 1971, p.5). In Armor's study of METCO, college attendance data was obtained for 32 bused 1970 graduates, and 16 controls. Bused students were considerably more likely to begin college, 84% to 56%. By the end of the sophomore year, however, the percentages of graduates in college was pretty much the same, 59% to 56%. The graduates of integrated schools, though, were in higher quality institutions. Fifty-six percent of them were attending four year colleges, compared to 38% of the controls. Forty-seven percent of the bused graduates were attending full universities, compared to only 12% of the controls (Armor, forthcoming, p. 30). White suburban schools may exercise a channeling influence on black students, that reflects these schools' superior counselling and college contact resources. Reanalysis of the EEOS, however, does not support the idea that desegregation positively affects educational attainment. When average student aspirations, social class and test scores were controlled, there was no relationship between school racial composition and the reported school dropout and college entrance rates (Jencks, forthcoming, p. 289). The evidence that desegregation boosts black educational attainment is meager and unconvincing. But it does seem reasonable to expect that students will be somehow affected by a school's ethos and norms. The question is whether they will be alienated from those norms, or whether they will be encouraged to and strive to conform to them. One can envision some black students being positively affected by a college-oriented atmosphere, and others joining with those working-class white students attending even the "best" high schools, who comprise the 30 percent or more graduates of elite suburban schools that don't go on to college.

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[3] For white non-farm males, the correlation between IQ at grade 11 and adult occupational status is .50. The correlation between years of schooling and occupation is .65. (Jencks, forthcoming, p. 321 and p. 332).

So far we have considered the effects of desegregation only on measures of black academic achievement. Schools, however, may have an impact on other kinds of outcomes for which racial desegregation is relevant. These include how students feel about themselves and how they view others. The first may be directly related to academic performance. The second, insofar as it refers to attitudes about race relations, bears on the argument that school desegregation is a means to reducing interracial hostility, prejudice and discrimination. Does desegregation enhance black student's views of themselves and of their roles? Is desegregation associated with more positive attitudes about interracial contact?

Since the publication of the Coleman report, terms like "self-concept" and "fate-control" have received wide currency. Coleman found that items measuring a student's view of himself bore a strong relationship to white achievement. He found that items which tapped a student's confidence in his ability to successfully manipulate the environment were strongly associated with black achievement (Coleman, 1966, p. 320). Therefore, we are somewhat more interested in the effects of school desegregation on black fate-control than on black self-concept. The effect of desegregation on black self-concept seems to be nil. Reanalysis of the EEOS, as well as some small surveys, indicate that black students in desegregated schools do not view themselve significantly differently from how segregated students view themselves (McPartland, 1968, p. 205; Armor, forthcoming, p. 25).

The finding is quite different with respect to black fate-control. Both the length of desegregation and present classroom racial composition significantly affected whether a black student disagreed with the statement "good luck is more important than hard work for success". The longer a student had been desegregated, and the more white classmates he presently had, the more likely he was to indicate confidence in his own ability to manipulate the environment (McPartland, 1968, p. 207; U. S. Commission on Civil Rights, I, 1967, p. 108). Inspection of Table VI suggests that length of desegregation bears the most consistent relationship to the measure of fate-control. Within categories of classroom composition, the relationship of length of desegregation and fate-control is uniform. Within categories of earliest grade of desegregation, the relationship is not always uniform across categories of classroom composition. This suggests once again the importance of beginning desegregation in the early grades.

Desegregation is sometimes advanced as a strategy to enhance black aspirations. There is some evidence that lower-class, high ability black ninth-grade males are more likely to be planning to go to college if they are in majority-white schools (U. S. Commission on Civil Rights, II, 1967, p. 146). Otherwise, there seems to be no effect of desegregation on black aspirations. Jencks' reanalysis of the EEOS showed that when family background and test scores were controlled, students in black schools had the same aspirations as those in white schools (Jencks, forthcoming, p. 288) In the METCO busing study, there were no significant differences in changes in educational or occupational aspiration between bused and non-bused students.

It is important to remember however that METCO students, in fact, had a higher rate of college entrance than did the controls. Reported aspirations and actual behavior do not necessarily correspond.

Integration proponents, particularly whites, often urge school desegregation as a way of fostering positive racial attitudes and better interracial relations. Integration is expected to break down racial barriers. The Civil Rights Commission Analysis and other survey results show that black adults who have attended integrated schools are more likely than blacks who have attended segregated schools to favor integrated schools and neighborhoods. They are also more likely to actually live in integrated neighborhoods and to send their children to integrated schools (U. S. Commission on Civil Rights, I, 1967, pp. 110-113; II, appendix C-5). A survey of black 1965 high school graduates in Oakland, California, found that those graduates who had attended desegregated schools were more favorable towards integrated schooling and neighborhoods and were less suspicious of whites, than were those who had attended segregated schools (U.S. Commission on Civil Rights, II, 1967, p. 208). Finally, reanalysis of the EEOS ninth grade sample showed that students in majority-white classrooms were more likely to favor integrated schools and friendship groups (U.S. Commission on Civil Rights, II, 1967, p. 139-141).

The survey results on racial attitudes are at odds with the results of the METCO busing study. Armor found that for the junior and senior high students, "integration heightens racial identity and consciousness, enhances ideologies that promote racial segregation, and reduces opportunities for actual contacts between the races" (Armor, forthcoming, p. 26). For example, the proportion of bused students preferring schools of no more than 50 percent white increased from 51% in 1968 to 81% in 1970. The proportion of still segregated students preferring a no more than 50 percent white school changed from 47% in 1968 to 66% in 1970 (Armor, forthcoming, p. 26). This suggests that while black students as a whole were moving away from a perference for majority-white schools, students in such schools were moving away faster. Armor's measures of racial attitudes do not show that black students are against integration. What they show is that integrated students have reduced their stated commitment to integration more than still segregated students have.

There are a number of possible reasons for the discrepancy between the survey results and the METCO results. One is that the surveys asked different questions from the METCO questionnaire. The surveys asked about attitudes towards desegregated settings. The METCO study asked about attitudes towards black power and majority-white schools. One could certainly favor black-power and majority-black schools, and still want to attend school with a substantial number of whites. METCO students have not quit the program, indicating that they are not objecting to integration as much as they are objecting to being a special and small minority in other communities' schools. If this interpretation is correct, then the METCO study is not a fair test of the effects that long-term and wide-scale busing would have on racial attitudes. There is, of course, the possibility that the positive survey findings result from initial selection bias. Black

TABLE VI

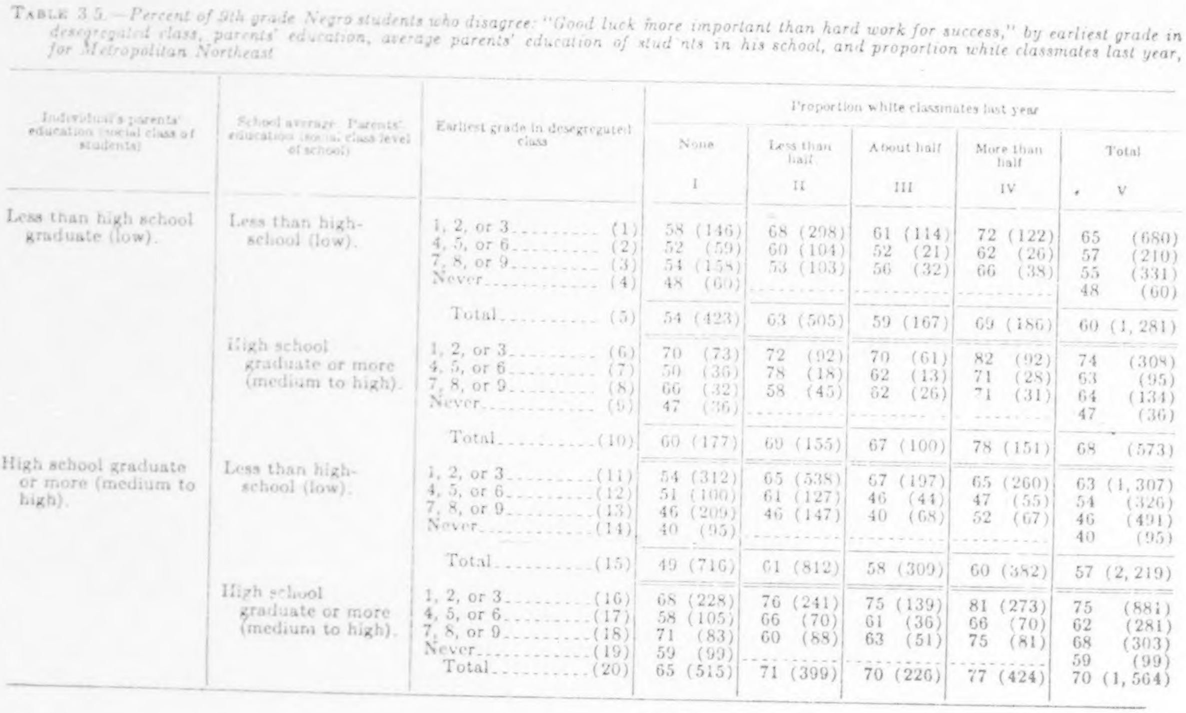

TABLE 3.5.—*Percent of 9th grade Negro students who disagree: "Good luck more important than hard work for success," by earliest grade in desegregated class, parents' education, average parents' education of students in his school, and proportion white classmates last year, for Metropolitan Northeast*

Individual's parents' education (social class of students)	School average: Parents' education (social class level of school)	Earliest grade in desegregated class	Proportion white classmates last year				
			None I	Less than half II	About half III	More than half IV	Total V
Less than high school graduate (low).	Less than high-school (low).	1, 2, or 3 (1)	58 (146)	68 (298)	61 (114)	72 (122)	65 (680)
		4, 5, or 6 (2)	52 (59)	60 (104)	52 (21)	62 (26)	57 (210)
		7, 8, or 9 (3)	54 (158)	53 (103)	56 (32)	66 (38)	55 (331)
		Never (4)	48 (60)				48 (60)
		Total (5)	54 (423)	63 (505)	59 (167)	69 (186)	60 (1,281)
	High school graduate or more (medium to high).	1, 2, or 3 (6)	70 (73)	72 (92)	70 (61)	82 (92)	74 (308)
		4, 5, or 6 (7)	50 (36)	78 (18)	62 (13)	71 (28)	63 (95)
		7, 8, or 9 (8)	66 (32)	58 (45)	62 (26)	71 (31)	64 (134)
		Never (9)	47 (36)				47 (36)
		Total (10)	60 (177)	69 (155)	67 (100)	78 (151)	68 (573)
High school graduate or more (medium to high).	Less than high-school (low).	1, 2, or 3 (11)	54 (312)	65 (538)	67 (197)	65 (260)	63 (1,307)
		4, 5, or 6 (12)	51 (100)	61 (127)	46 (44)	47 (55)	54 (326)
		7, 8, or 9 (13)	46 (209)	46 (147)	40 (68)	52 (67)	46 (491)
		Never (14)	40 (95)				40 (95)
		Total (15)	49 (716)	61 (812)	58 (309)	60 (382)	57 (2,219)
	High school graduate or more (medium to high).	1, 2, or 3 (16)	68 (228)	76 (241)	75 (139)	81 (273)	75 (881)
		4, 5, or 6 (17)	58 (105)	66 (70)	61 (36)	66 (70)	62 (281)
		7, 8, or 9 (18)	71 (83)	60 (88)	63 (51)	75 (81)	68 (303)
		Never (19)	59 (99)				59 (99)
		Total (20)	65 (515)	71 (399)	70 (226)	77 (424)	70 (1,564)

(U. S. Commission on Civil Rights, II, p. 62) students in naturally integrated schools may well come from families who chose integrated settings and who foster positive attitudes towards interracial contact. If this were true, the apparent effects of integrated schooling on black attitudes would be spurious.

White opposition to school desegregation is based on a number of fears. One is that the academic achievement of white middle-class students will be adversely affected by the presence of substantial numbers of lower-class black classmates. The logic which asserts that lower-class students gain from attending school with middle-class students, can be reversed to argue that lower-class students will negatively affect middle-class achievement.

The evidence for the effects of desegregation on white achievement is scanty and conflicting. Whites in naturally desegregated classes seem to score a few points lower on achievement tests than those in white classes, controlling for parents' education. Above the effect of class percent black, there was no apparent effect of school percent black on white achievement (U. S. Commission on Civil Rights, II, 1967, p. 135). This finding may well result from the fact that white students who naturally go to school with blacks are of lower social class than those who go to school only with whites. The control on parents' educaton may not be a sufficiently fine control of social class. Figure I (above, p. 4a) showed that for ninth graders white social class and white achievement covaried, and fell as the percent black increased. For white northern sixth graders, the correlation between average white social class and school percent black is -.462 (Cohen, Pettigrew and Reiley, 1972, p. 351). This is further indication that the apparent effect of desegregation on white achievement results from selection bias. Another piece of evidence that this is the case is that in the EEO Northeast ninth grade sample there was no effect of earliest grade with non-white classmates on white test scores (U.S. Commission on Civil Rights, II, 1967, p. 136). If there were a real desegregation effect on white achievement, we would expect it to operate on whites the way it seems to on blacks, and be cumulative in its impact. Unfortunately, this last conclusion is called into question by Wilson's study, in California. Wilson found that for whites the effects of the junior and senior high school social class composition on an 11th grade IQ test were nil, but that the social class composition of the elementary school had a significant effect (Wilson, 1967, p. 188).

The most optimistic evidence that desegregation does not adversely affect white test scores comes from Jencks' analysis of northern elementary schools. He tested the selectivity hypothesis by comparing the differences between first and sixth grade scores across schools of varying racial composition. This is a way of controlling for differential inicial ability. He found that white scores in integrated schools rose more than they did in segregated schools. Table VII represents the results of Jencks' analysis.

TABLE VII

First Grade Scores and Sixth Grade "Gain" Scores of White Northern Urban Elementary Students on EEOS Tests (in Standard Scores) by School Composition

	School Percent White				
	0-25	25-50	51-75	75-80	80-100
First Grade Score	-.761	-.583	-.192	-.080	-.166
Sixth Grade Gain	.024	.175	.177	-.032	-.035

(Taken from Jencks, 1971, addended tables)

The Jencks results accord with the results of the few busing studies which have bothered to look at white scores. None of these have demonstrated any decline in white scores, when blacks have been bused into white schools (CEPR, 1971, p. 84). Again, Wilson's results contradict the results of reanalysis of the EEOS data. In Wilson's study, controls on individual social class and first grade ability did not eliminate the effects of social class integration on white scores (Wilson, 1967, p. 184). Since school social class composition and school racial composition were highly correlated (.77), racial desegregation was negatively associated with white achievement in the Wilson survey. These findings are in no way conclusive. We simply do not know how and to what degree substantial school desegregation would affect white achievement.

SUMMARY

1. Proponents of desegregation expect it to substantially raise black achievement.
2. Black students in desegregated schools and classrooms perform better on standard achievement tests than do black students in segregated schools and classrooms. This performance advantage is not explained away by differences on individual social class as that is presently measured, nor is it explained away by differences in school resources.
3. The advantage of desegregated students is principally but maybe not exclusively associated with the higher social class composition of white schools.
4. Desegregation appears to benefit lower as well as middle-class black achievement, but not quite as much.
5. Classroom desegregation, not school desegregation, affects black achievement.

6. Desegregation has greater impact on younger students.

7. Desegregation is cumulative in its impact. Maximum effect results from early desegregation.

8. The effect of desegregation on black achievement is educationally important, but would not substantially reduce racial inequality in achievement.

9. Studies of early busing programs do not support the results of survey analysis which show a positive effect of desegregation on black achievement. This may be because of the student's ages, the short duration of the programs under study, and the failure of bused students to be genuinely integrated into the school community.

10. Desegregation may have a positive effect on black educational attainment and on the quality of higher education blacks receive.

11. Desegregation is positively associated with measurement of black "fate-control" which in the EEOS is a major determinant of black achievement.

12. There is little apparent effect of desegregation on black educational or occupational aspirations.

13. Survey analysis suggests a positive effect of desegregating on black attitudes about race relations. Busing studies do not evidence such an effect.

14. There is no clear cut evidence about the effect of desegregation on white achievement. Reanalysis of the EEOS northern elementary sample showed that there was no negative effect. A survey in California concluded the opposite.

Conclusion

Social science research does not offer any definitive conclusions about the probable effects of school desegregation on achievement, aspirations, or attitudes. The direction of the evidence is that the effects will be positive and of small magnitude.

Since the measured outcomes of desegregation are not likely to be sufficiently large to compel desegregation as a strictly "educational" strategy, it would be more fruitful if desegregation were debated and judged in social and political terms. Community control advocates and neighborhood school proponents have already raised serious questions about the needs which the schools should serve, and the ways in which they should serve them. We must begin to think more carefully about the desirable bases for the character of public institutions. It may well be that a full and equal share in public life requires racially and ethnically integrated schools. But it may also be that community based schools can serve as mediating institutions between the individual and the state. This position is elegantly argued in Leonard Fein's *The Ecology of the Public Schools* (Pegasus, New York, 1971). With the matter of school integration the values of equality and universalism may well collide with the values of pluralism and community integrity. The resolution of this value conflict will not be found in sociological tables.

APPENDIX IIB

Child Care: Data and Materials
Committee on Finance
U.S. Senate
R.B. Long, Chairman (June 16, 1971)

APPENDIX

Federal Interagency Day Care Requirements

Code of Federal Regulations, Title 45, Subtitle A

Part 71—Federal Interagency Day Care Requirements

Subpart A—General

Sec.
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71.2 Scope and purpose.
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71.15 Social services.
71.16 Health and nutrition services.
71.17 Training of staff.
71.18 Parent involvement.
71.19 Administration and coordination.
71.20 Evaluation.

AUTHORITY: The provisions of this Part 71 issued under sec. 522(d), 81 Stat. 713, sec. 602, 78 Stat. 528, 42 U.S.C. 2932(d), 2942; sec. 1102, 49 Stat. 647, 42 U.S.C. 1302; sec. 7, 64 Stat. 1107, as renumbered sec. 301, 79 Stat. 35, 20 U.S.C. 242; sec. 1001(c), 80 Stat. 1475, sec. 14, 79 Stat. 80, 42 U.S.C. 2610c, 2616.

SOURCE: The provisions of this Part 71 appear at 34 F.R. 1390, Jan. 29, 1969, unless otherwise noted.

Subpart A—General

§ 71.1 *Definitions*

As used in this part:

(a) "Day care services" means comprehensive and coordinated sets of activities providing direct care and protection of infants, preschool and

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school-age children outside of their own homes during a portion of a 24-hour day. (The Office of Economic Opportunity uses 7 hours as the minimum time period for its preschool day care programs; however, most of the standards in this document are also applicable to part-day Head Start programs.) Comprehensive services include, but are not limited to, educational, social, health, and nutritional services and parent participation. Such services require provision of supporting activities including administration, coordination, admissions, training and evaluation.

(b) "Administering agency" means any agency which either directly or indirectly receives Federal funds for day care services subject to the Federal Interagency Day Care Standards and which has ultimate responsibility for the conduct of such a program. Administering agencies may receive Federal funds through a State agency or directly from the Federal Government. There may be more than one administering agency in a single community.

(c) "Operating agency" means an agency directly providing day care services with funding from an administering agency. In some cases, the administering and operating agencies may be the same, e.g., public welfare departments or community action agencies which directly operate programs. Portions of the required services may be performed by the administering agency.

(d) "Day care facility" means the place where day care services are provided to children; e.g., family day care homes, group day care homes, and day care centers. Facilities do not necessarily provide the full range of day care services. Certain services may be provided by the administering or operating agency.

(e) "Standards." Standards consist of both interagency requirements and recommendations. The requirements only are presented in this document; the recommendations will be issued separately.

(1) "Interagency requirements" means a mandatory policy which is applicable to all programs and facilities funded in whole or in part through Federal appropriations.

(2) "Interagency recommendations" means an optional policy based on what is known or generally held to be valid for child growth and development which is recommended by the Federal agencies and which administering agencies should strive to achieve.

§ 71.2 *Scope and purpose*

The legislative mandates of the Economic Opportunity Amendments of 1967 require that the Secretary of Health, Education, and Welfare and the Director of the Office of Economic Opportunity coordinate programs under their jurisdictions which provide day care so as to obtain, if possible, a common set of program standards and regulations and to establish mechanisms for coordination at State and local levels. The Secretary of Labor has joined with the Director of the Office of Economic Opportunity and the Secretary of Health, Education, and Welfare in approving these standards. Accordingly, this part sets forth Federal interagency requirements which day care programs must meet if they are receiving funds under any of the following programs:

(a) Title IV of the Social Security Act: Part A—Aid to Families With Dependent Children; Part B—Child Welfare Services.

(b) Title I of the Economic Opportunity Act—Youth Programs.

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(c) Title II of the Economic Opportunity Act—Urban and Rural Community Action Programs.

(d) Title III of the Economic Opportunity Act—Part B—Assistance for Migrant, and other Seasonally Employed, Farmworkers and Their Families. (These Federal interagency requirements will not apply in full to migrant programs until July 1, 1969.)

(e) Title V of the Economic Opportunity Act—Part B—Day Care Projects.

(f) Manpower Development and Training Act.

(g) Title I of the Elementary and Secondary Education Act. (Programs funded under this title may be subject to these requirements at the discretion of the State and local education agencies administering these funds.)

§ 71.3 *Application of requirements*

(a) As a condition for Federal funding, agencies administering day care programs must assure that the requirements are met in all facilities which the agencies establish, operate or utilize with Federal support. If a facility does not provide all of the required services, the administering agency must assure that those that are lacking are otherwise provided.

(b) Administering agencies must develop specific requirements and procedures within the framework of the Federal interagency requirements and recommendations to maintain, extend, and improve their day care services. Additional standards developed locally may be higher than the Federal requirements and must be at least equal to those required for licensing or approval as meeting the standards established for such licensing. Under no circumstances may they be lower. It is the intent of the Federal Government to raise and never to lower the level of day care services in any State.

(c) The interagency requirements will be utilized by Federal agencies in the evaluation of operating programs.

(d) The provisions of this part cover all day care programs and facilities utilized by the administering agencies which receive Federal funds, whether these facilities are operated directly by the administering agencies or whether contracted to other agencies. Such programs and facilities must also be licensed or meet the standards of licensing applicable in the State. Day care may be provided:

(1) On a day care facility operated by the administering agency.

(2) In a day care facility operated by a public, voluntary, or proprietary organization which enters into a contract to accept children from the administering agency and to provide care for them under the latter's policies. (The operating organization may also serve children who are not supported by the administering agency.)

(3) Through some other contractual or other arrangement, including the use of an intermediary organization designed to provide coordinated day care services, or the use of facilities provided by employers, labor unions, or joint employer—union organizations.

(4) Through the purchase of care by an individual receiving aid to families with dependent children or child welfare services funds for the service.

§ 71.4 *Waiver of requirements*

Requirements can be waived when the administering agency can show that the requested waiver may advance innovation and experimentation and extend services without loss of quality in the facility. Waivers must be con-

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sistent with the provisions of law. Requests for waivers should be addressed to the regional office of the Federal agency which is providing the funds. Requirements of the licensing authority in a State cannot be waived by the Federal regional office.

§ 71.5 *Effective date of requirements*

The requirements apply to all day care programs initially funded and to those refunded after July 1, 1968. Administering agencies are expected to immediately initiate planning and action to achieve full compliance within a reasonable time. Except where noted, up to 1 year may be allowed for compliance provided there is evidence of progress and good intent to comply.

§ 71.6 *Enforcement of requirements*

(a) The basic responsibility for enforcement of the requirements lies with the administering agency. Acceptance of Federal funds is an agreement to abide by the requirements. State agencies are expected to review programs and facilities at the local level for which they have responsibility and make sure that the requirements are met. Noncompliance may be grounds for suspension or termination of Federal funds.

(b) The Federal agencies acting in concert will also plan to review the operation of selected facilities.

Subpart B—Comprehensive and Coordinated Services

§ 71.10 *Types of facilities*

It is expected that a community program of day care services will require more than one type of day care facility if the particular needs of each child and his parents are to be taken into consideration. Listed in this section are the three major types of day care facilities to which the Federal requirements apply. They are defined in terms of the nature of care offered. While it is preferable that the three types of facilities be available, this is not a requirement.

(a) The family day care home serves only as many children as it can integrate into its own physical setting and pattern of living. It is especially suitable for infants, toddlers, and sibling groups and for neighborhood-based day care programs, including those for children needing after-school care. A family day care home may serve no more than six children (3 through 14) in total (no more than five when the age range is infancy through six), including the family day care mother's own children.

(b) The group day care home offers family-like care, usually to school-age children, in an extended or modified family residence. It utilized one or several employees and provides care for up to 12 children. It is suitable for children who need before- and after-school care, who do not require a great deal of mothering or individual care, and who can profit from considerable association with their peers.

(c) The day care center serves groups of 12 or more children. It utilizes subgroupings on the basis of age and special need but provides opportunity for the experience and learning that accompany a mixing of ages. Day care centers should not accept children under 3 years of age unless the care available approximates the mothering in the family home. Centers do not usually attempt to simulate family living. Centers may be established in a variety of places: private dwellings, settlement houses, schools, churches social centers, public housing units, specially constructed facilities, etc.

§ 71.11 *Grouping of children*

The administering agency, after determining the kind of facility to be used, must ensure that the following limits on size of groups and child-to-adult ratios are observed. All new facilities must meet the requirements prior to Federal funding. Existing programs may be granted up to 3 years to meet this requirement, if evidence of progress and good intent is shown.

(a) Family day care home:

(1) Infancy through 6 years. No more than two children under two and no more than five in total, including the family day care mother's own children under 14 years old.

(2) Three through 14 years. No more than six children, including the family day care mother's children under 14 years old.

(3) (i) In the use of a family day care home, there must always be provision for another adult on whom the family day care mother can call in case of an emergency or illness.

(ii) There are circumstances where it would be necessary to have on a regular basis two adults in a family day care home; for example, if one or more of the children were retarded, emotionally disturbed, or handicapped and needed more than usual care.

(iii) The use of volunteers is very appropriate in family day care. Volunteers may include older children who are often very successful in working with younger children when under adequate supervision.

(b) Group day care home:

(1) Three through 14 years. Groups may range up to 12 children but the child—staff ratio never exceeds six to one. No child under three should be in this type of care. When preschool children are cared for, the child—staff ratio should not exceed five to one.

(2) (i) Volunteers and aides may be used to assist the adult responsible for the group. Teenagers are often highly successful in working with younger children, but caution should be exercised in giving them supervisory responsibility over their peers.

(ii) As in family day care, provision must be made for other adults to be called in case of an emergency or illness.

(c) Day care center:

(1) Three to 4 years. No more than 15 in a group with an adult and sufficient assistants, supplemented by volunteers, so that the total ratio of children to adults is normally not greater than 5 to 1.

(2) Four to 6 years. No more than 20 in a group with an adult and sufficient assistants, supplemented by volunteers, so that the total ratio of chlidren to adults is normally not greater than 7 to 1.

(3) Six through 14 years. No more than 25 in a group with an adult and sufficient assistants, supplemented by volunteers, so that the total ratio of children to adults is normally not greater than 10 to 1.

(4) (i) The adult is directly responsible for supervising the daily program for the children in her group and the work of the assistants and volunteers assigned to her. She also works directly with the children and their parents, giving as much individual attention as possible.

(ii) Volunteers may be used to supplement the paid staff responsible for the group. They may include older children who are often highly successful in working with younger children. Caution should be exercised in assigning teenagers supervisory responsibility over their peers.

(d) Federal interagency requirements have not been set for center care of children under 3 years of age. If programs offer center care for children younger than 3, State licensing regulations and requirements must be met. Center care for children under 3 cannot be offered if the State authority has not established acceptable standards for such care.

§ 71.12 *Licensing or approval of facilities as meeting the standards for such licensing*

Day care facilities must be licensed or approved as meeting the standards for such licensing. If the State licensing law does not fully cover the licensing of these facilities, acceptable standards must be developed by the licensing authority or the State welfare department and each facility must meet these standards if it is to receive Federal funds.

§ 71.13 *Environmental standards*

(a) *Location of day care facilities.* (1) Members of low income or other groups in the population and geographic areas who (i) are eligible under the regulations of the funding agency and (ii) have the greatest relative need must be given priority in the provision of day care services.

(2) In establishing or utilizing a day care facility, all the following factors must be taken into consideration:

(i) Travel time for both the children and their parents.

(ii) Convenience to the home or work site of parents to enable them to participate in the program.

(iii) Provision of equal opportunities for people of all racial, cultural, and economic groups to make use of the facility.

(iv) Accessibility of other resources which enhance the day care program.

(v) Opportunities for involvement of the parents and the neighborhood.

(3) Title VI of the Civil Rights Act of 1964 requires that services in programs receiving Federal funds are used and available without discrimination on the basis of race, color or national origin.

(b) Safety and sanitation. (1) The facility and grounds used by the children must meet the requirements of the appropriate safety and sanitation authorities.

(2) Where safety and sanitation codes applicable to family day care homes, group day care homes, or day care centers do not exist or are not being implemented, the operating agency or the administering agency must work with the appropriate safety and sanitation authorities to secure technical advice which will enable them to provide adequate safeguards.

(c) *Suitability of facilities.* Each facility must provide space and equipment for free play, rest, privacy and a range of indoor and outdoor program activities suited to the children's ages and the size of the group. There must be provisions for meeting the particular needs of those handicapped children enrolled in the program. Minimum requirements include:

(1) Adequate indoor and outdoor space for children appropriate to their ages, with separate rooms or areas for cooking, toilets and other purposes.

(2) Floors and walls which can be fully cleaned and maintained and which are nonhazardous to the children's clothes and health.

(3) Ventilation and temperature adequate for each child's safety and comfort.

(4) Safe and comfortable arrangements for naps for young children.

(5) Space for isolation of the child who becomes ill, to provide him with quiet and rest and reduce the risk of infection or contagion to others.

§ 71.14 *Educational services*

(a) Educational opportunities must be provided every child. Such opportunities should be appropriate to the child's age regardless of the type of facility in which he is enrolled; i.e., family day care home, group day care home, or day care center.

(b) Educational activities must be under the supervision and direction of a staff member trained or experienced in child growth and development. Such supervision may be provided from a central point for day care homes.

(c) The persons providing direct care for children in the facility must have had training or demonstrated ability in working with children.

(d) Each facility must have toys, games, equipment and material, books, etc., for educational development and creative expression appropriate to the particular type of facility and age level of the children.

(e) The daily activities for each child in the facility must be designed to influence a positive concept of self and motivation and to enhance his social, cognitive, and communication skills.

§ 71.15 *Social services*

(a) Provision must be made for social services which are under the supervision of a staff member trained or experienced in the field. Services may be provided in the facility or by the administering or operating agency.

(b) Nonprofessionals must be used in productive roles to provide social services.

(c) Counseling and guidance must be available to the family to help it determine the appropriateness of day care, the best facility for a particular child, and the possibility of alternative plans for care. The staff must also develop effective programs of referral to additional resources which meet family needs.

(d) Continuing assessment must be made with the parents of the child's adjustment in the day care program and of the family situation.

(e) There must be procedures for coordination and cooperation with other organizations offering those resources which may be required by the child and his family.

(f) Where permitted by Federal agencies providing funds, provision should be made for an objective system to determine the ability of families to pay for part or all of the cost of day care and for payment.

§ 71.16 *Health and nutrition services*

(a) The operating or administering agency must assure that the health of the children and the safety of the environment are supervised by a qualified physician.

(b) Each child must receive dental, medical, and other health evaluations appropriate to his age upon entering day care and subsequently at intervals appropriate to his age and state of health. (If the child entering day care has not recently had a comprehensive health evaluation by a physician, this should be provided promptly after he enters a day care program.)

(c) Arrangements must be made for medical and dental care and other health related treatment for each child, using existing community resources. In the absence of other financial resources, the operating or administering agency must provide, whenever authorized by law, such treatment with its own funds. (The day care agency, in those instances where Federal funds are legally available to be expended for health services, has the ultimate responsibility of ensuring that no child is denied health services because his parents are unable to carry out an adequate health plan. Funds for aid to families with dependent children are not legally available for health care, but States are encouraged to use Medic-aid funds whenever possible.)

(d) The facility must provide a daily evaluation of each child for indications of illness.

(e) The administering or operating agency must ensure that each child has available to him all immunizations appropriate to his age.

(f) Advance arrangements must be made for the care of a child who is injured or becomes ill, including isolation if necessary, notification of his parents, and provisions for emergency medical care or first aid.

(g) The facility must provide adequate and nutritious meals and snacks prepared in a safe and sanitary manner. Consultation should be available from a qualified nutritionist or food service specialist.

(h) All staff members of the facility must be aware of the hazards of infection and accidents and how they can minimize such hazards.

(i) Staff of the facility and volunteers must have periodic assessments, including tuberculin tests or chest X-rays, of their physical and mental competence to care for children.

(j) The operating or administering agency must ensure that adequate health records are maintained on every child and every staff member who has contact with children.

§ 71.17 *Training of staff*

(a) The operating or administering agency must provide or arrange for the provision of orientation, continuous inservice training, and supervision for all staff involved in a day care program—professionals, nonprofessionals, and volunteers—in general program goals as well as specific program areas; i.e., nutrition, health, child growth and development, including the meaning of supplementary care to the child, educational guidance and remedial techniques, and the relation of the community to the child.

(b) Staff must be assigned responsibility for organizing and coordinating the training program.

(c) Nonprofessional staff must be given career progression opportunities which include job upgrading and work-related training and education.

§ 71.18 *Parent involvement*

(a) Opportunities must be provided parents at times convenient to them to work with the program and, whenever possible, to observe their children in the day care facility.

(c) Whenever an agency (i.e., an operating or an administering agency) provides day care for 40 or more children, there must be a policy advisory committee or its equivalent at that administrative level where most decisions are made on the kinds of programs to be operated, the hiring of staff, the budgeting of funds, and the submission of applications to funding agencies. The committee membership should include not less than 50 percent parents or parent representatives, selected by the parents themselves in a democratic fashion. Other members should include representatives of professional organizations or individuals who have particular knowledge or skills in children's and family programs.

(d) Policy advisory committees (the structure of which will vary depending upon the administering agencies and facilities involved) must perform productive functions, including but not limited to:

(1) Assisting in the development of the programs and approving applications for funding.

(2) Participating in the nomination and selection of the program director at the operating and/or administering level.

(3) Advising on the recruitment and selection of staff and volunteers.

(4) Initiating suggestions and ideas for program improvements.

([illegible]) Serving as a channel for hearing complaints on the program.

(6) Assisting in organizing activities for parents.

(7) Assuming a degree of responsibility for communicating with parents and encouraging their participation in the program.

§ 71.19 *Administration and coordination*

(a) *Administration.* (1) The personnel policies of the operating agency must be governed by written policies which provide for job descriptions, qualification requirements, objective review of grievances and complaints, a sound compensation plan, and statements of employee benefits and responsibilities.

(2) The methods of recruiting and selecting personnel must ensure equal opportunity for all interested persons to file an application and have it considered within reasonable criteria. By no later than July 1, 1969, the methods for recruitment and selection must provide for the effective use of nonprofessional positions and for priority in employment to welfare recipients and other low-income people filling those positions.

(3) The staffing pattern of the facility, reinforced by the staffing pattern of the operating and administering agency, must be in reasonable accord with the staffing patterns outlined in the Head Start Manual of Policies and Instructions and/or recommended standards developed by national standard-setting organizations.

(4) In providing day care through purchase of care arrangements or through use of intermediary organizations, the administering agency should allow waivers by the operating agency only with respect to such administrative matters and procedures as are related to their other functions as profit-making or private nonprofit organizations: provided, that in order for substantial Federal funds to be used, such organizations must include provisions for parent participation and opportunities for employment of low-income persons. Similarly, there must be arrangements to provide the total range of required services. All waivers must be consistent with the law.

(5) The operating or administering agency must provide for the development and publication of policies and procedures governing:

(i) Required program services (i.e., health, education, social services, nutrition, parent participation, etc.) and their integration within the total program.

(ii) Intake including eligibility for care and services, and assurance that the program reaches those who need it.

(iii) Financing, including fees, expenditures, budgeting, and procedures needed to coordinate or combine funding within and/or between day care programs.

(iv) Relations with the community, including a system of providing education about the program.

(v) Continuous evaluation, improvement, and development of the program for quality of service and for the expansion of its usefulness.

(vi) Recording and reporting of information required by State and Federal agencies.

(6) The administering and operating agencies and all facilities used by them must comply with title VI of the Civil Rights Act of 1964, which requires that services in programs receiving Federal funds are used and available without discrimination on the basis of race, color, or national origin.

(7) Where the administering agency contracts for services with private individuals or proprietary organizations, it must include contractual requirements designed to achieve the objectives of this section.

(b) *Coordination.* (1) Administering agencies must coordinate their program planning to avoid duplication in service and to promote continuity in the care and service for each child.

(2) State administering agencies have a responsibility to develop procedures which will facilitate coordination with other State agencies and with local agencies using Federal funds.

(3) Agencies which operate more than one type of program; e.g., a group day care home as well as day care center programs, are encouraged to share appropriate personnel and resources to gain maximum productivity and efficiency of operation.

§ 71.20 *Evaluation*

(a) Day care facilities must be evaluated periodically in terms of the Federal Interagency Day Care Requirements.

(b) Local operators must evaluate their own program activities according to outlines, forms etc., provided by the operating and administering agencies. This self-evaluation must be periodically planned and scheduled so that results of evaluation can be incorporated into the preparation of the succeeding year's plan.

APPENDIX IIC

FEDERAL DAY CARE REQUIREMENTS

DRAFT

June 19, 1972

FEDERAL DAY CARE REQUIREMENTS

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INTRODUCTION

PURPOSE

These requirements are designed to ensure quality day care for children in day care programs supported directly or indirectly by Federal funds. They represent minimum requirements which must be met by each program and, as such, should not be construed as defining ideal day care. In some respects (e.g., staff competence) day care operators should strive for higher standards than are defined herein as minimums.

Day care should do more than ensure the child a safe and comfortable place to stay. It should complement the home and school in contributing to each child's development -- his physical and emotional health and growth, his mental and language skills, his knowledge of himself and the world about him, and his motivation and social competence.

GENERAL CONTENTS

These requirements are concerned with the responsibilities of both administering agencies and operators (see definitions).

Requirements for the operator or operating agencies are described fully in this document. Requirements for administering agencies are also specified, but only in so far as they pertain to services directly provided to parents, caregivers, and operators.

Regulations for administering agencies (i.e., those rules and practices of an essentially administrative nature pertaining to general planning and coordination, personnel and staffing, monies needed to supplement Federal funds, legal assurances, etc.) are issued persuant to each Federal law authorizing day care. Such regulations are available elsewhere and are not included in this document.

WHO MUST MEET THESE REQUIREMENTS

Any day care operator or facility which receives Federal funds for the care of children either directly or indirectly through:

grant
contract
reimbursement of expenditures
vendor payment
voucher or
fees made possible by income disregard

must meet these requirements. The administering agency must ensure that all operators and facilities which are established, operated or supported with Federal funds meet these requirements.

Excluded from these requirements are accredited educational facilities, health facilities and mental health facilities in their provision of educational or health services. When, however, such facilities operate day care programs not primarily for health or educational purposes, such facilities are covered under these requirements.

Care of children in an in-home setting (see definitions) is not covered by these Requirements except as provided in Section III.

NON-DISCRIMINATION PROVISION

Programs and facilities covered by these regulations are subject to the provisions of the Civil Rights Act of 1964, Section 601 of which states:

> "No person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance."

DEFINITIONS

DAY CARE:

The care, supervision and guidance of a child or group of children, unaccompanied by parent or guardian on a regular basis, for periods of less than 24 hours per day.

DAY CARE FACILITY:

The premises in which day care is provided. (The term does not apply to in-home care.)

FAMILY DAY CARE HOME:

An occupied residence in which a person regularly provides day care for children from more than one family (other than the caregiver's family). Under these Federal Requirements, such care in a family day care home is limited to that care given to 12 or fewer children, including children living in the home and children of close relatives cared for in the home. (This definition includes the type of facility often called "group day care home".)

DAY CARE CENTER:

(a) Any place other than an occupied residence which receives children for day care.

(b) Any place including an occupied residence which receives 13 or more children for day care.

IN-HOME CARE:

Day care of children in their own home by persons other than their parents, or in someone else's home where, aside from the caregiver's own children, the children of not more than one family are served.

ADMINISTERING AGENCY:

A public or private agency which receives by grant or contract and administers Federal financial assistance under programs comprehended by Section 522(d), EOA, as amended, and any other Federal law administered in whole or part by agencies responsible for issuance of these requirements for the provision of day care, directly, by means of delegate day care operators, or by purchase from day care operators, and which has and exercises responsibility, either by law or contract, for regulation of such day care operators.

DAY CARE OPERATOR:

An individual or organization providing day care services directly to children and responsible for the overall operation of a day care program. The term "day care operator" does not include persons providing in-home care as defined herein. (Note: A person operating a family day care home or small day care center may be simultaneously a caregiver and a day care operator.)

CAREGIVER:

Any person whose primary duties include direct care, supervision and guidance of children other than his or her own.

INFANT:

A child aged 0 through 18 months.

TODDLER:

A child aged 19 months through 35 months.

PRE-SCHOOL CHILD:

A child aged 3 years through enrollment in first grade.

SCHOOL AGE CHILD:

A child aged 7 years through 14 years, or a younger child who has entered first grade.

LOCAL, STATE OR ADMINISTERING AGENCY REQUIREMENTS IN ADDITION TO FEDERAL REQUIREMENTS

A state or local government or administering agency may develop specific requirements and procedures for licensing, certification or reimbursement that augment or supplement these Federal Day Care Requirements. Such additional requirements must in no way reduce the quality of care intended by the Federal Requirements and should not impede the development of quality day care by imposing unrealistically stringent requirements.

In those cases where the Federal Requirements use general terms such as "appropriate", "regular", "adequate", etc., the purpose is to permit particularizing the standards to meet local conditions (e.g., "the appropriate local authority"). In such cases the administering agency shall define more specific compliance criteria for local use.

WAIVERS

The administering agency has no authority to waive the requirement for compliance with these standards. However, in day care situations where one or more of these requirements is clearly inapplicable given local conditions, the Secretary of Health, Education and Welfare may waive specific requirements for designated individual operators for specified periods of time provided that no such waivers result in a reduction of health, safety or nutrition requirements stated herein.

Federal sponsoring agencies may also grant waivers of these requirements for bona fide experimental or demonstration efforts funded by them.

RELATIONSHIP BETWEEN ADMINISTERING AGENCIES AND OPERATORS

Day care operators retain a general responsibility for keeping caregivers and parents informed of the services available through, and the functions performed by, administering agencies (see Section II). Day care operators are also responsible for encouraging parents to utilize such services and for cooperating with the administering agency.

Functions ordinarily performed by administering agencies may be delegated to an operator or to another organization or agency (such as an association of providers, a local child development council or a community action agency) if permitted by applicable law. When such delegations are made, the administering agency retains ultimate responsibility for these functions.

REQUIREMENTS

The requirements are presented in three sections:

I. Requirements for Operators

II. Requirements for Administering Agencies

III. Requirements for In-Home Care

Each requirement is stated in bold face type. Minimum criteria which are evidence of satisfactory compliance are listed for each requirement. Where a criterion applies to all day care facilities no special notation is made. Criteria which apply only to day care homes, only to centers, or only to special age groups are specifically identified. All criteria listed must be met.

Any federal criterion specified in this document which is also included in existing state or local licensing codes will be considered fulfilled by presentation of an appropriate license.

SECTION I

REQUIREMENTS FOR OPERATORS

I.A. Meeting Code Requirements

*EVERY DAY CARE FACILITY MUST MEET REQUIRED LOCAL AND STATE FIRE, SAFETY, SANITATION, AND LICENSING CODES AND REGULATIONS.

Evidence of Satisfactory Compliance

1. Operators of day care facilities must possess appropriate written evidence indicating compliance with local and state codes and regulations pertaining to fire, safety, sanitation, and licensing.

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*It should be noted, that projects such as Head Start, which owe their existence directly to Federal law, and which are subject to Federal law, regulations and policies, are not by these requirements automatically made subject to State or local laws, regulations or other requirements which are inconsistent with the controlling Federal rules.

I.B. Ensuring Safety of Building and Premises

THE INDOOR AND OUTDOOR PREMISES OF A DAY CARE FACILITY MUST BE:

- FREE OF ENVIRONMENTAL HAZARDS
- CLEAN AND COMFORTABLE

Evidence of Satisfactory Compliance

1. There is a safe and effective heating system. Radiators, hot water pipes, and similar hazards are adequately screened or insulated to prevent burns.
2. No highly flammable furnishings or decorations are used. Flammable, other dangerous materials and potential poisons are stored in cabinets or storage facilities accessible only to authorized persons.
3. An approved working fire extinguisher is available and emergency lighting is available in case of power failure.
4. The premises are clean and free of hazards and other undesirable conditions (e.g., rodents, vermin, fumes, excessive noise, etc.)
5. Outdoor play areas are fenced or have other suitable barriers where necessary to prevent children from getting into unsafe areas. When children under age 10 are given care, there are no ponds, or swimming areas accessible to the children without supervision.

6. Premises are free of hazards (e.g., splintered, extremely sharp or protruding corners or edges, loose or broken parts). Stairways have railings, and if infants and toddlers are given care, safety gates are used. Clear glass doors are plainly marked to avoid accidental impact.

7. Paint coatings in premises used for care of children under age 6 have been evaluated to assure the absence of a hazardous quantity of lead.

8. Rooms are well lit.

9. A source of water approved by the appropriate local authority is available in the facility. Adequate toilets and handwashing facilities are available.

10. All sewage and liquid wastes are disposed of through a sewer system approved by an appropriate responsible authority. Solid waste garbage and rubbish is collected and stored in a safe and sanitary manner.

11. When infants and toddlers are given care, sufficient quantities of clean diapers are available and there is provision for their disposal when soiled. There is a handwashing facility near diaper changing areas. Toilet training chairs or infant toilet seats are provided and cleaned promptly after use. Safe facilities for bathing and cleaning infants and toddlers are available.

12. There is at least 35 square feet of indoor space per child available for the care of children (i.e., exclusive of bathrooms, halls, kitchen and storage places).

    or

    Limited indoor space is offset by outdoor space where shelter and climate permit reliable use of such space for activities normally conducted indoors.

13. When handicapped children are given care, adequate provision is made for their special needs to ensure their safety and comfort.

I.C. Duration of Stay in Day Care

CHILDREN DO NOT REMAIN IN DAY CARE FOR LONGER PERIODS OF TIME THAN IS NECESSARY.

As a general rule, when the child is in day care because his parent(s) or guardian is employed or enrolled in job training, the amount of time the child is in day care should be related to the time his parent is at work plus the time required to travel to and from employment.

Evidence of Satisfactory Compliance

1. Children are not kept in day care longer than is necessary, and a child does not remain in day care for more than the time the parent is at, and traveling to and from work, except in cases of emergency.

I.D. Ensuring the Continuing Development of Children

EACH CHILD MUST BE PROVIDED WITH EXPERIENCE, ACTIVITIES, EQUIPMENT, GUIDANCE AND SUPPORT THAT:

- CONTRIBUTE TO PHYSICAL AND EMOTIONAL DEVELOPMENT AND HEALTH
- DEVELOP MENTAL ABILITIES IN SUCH AREAS AS LANGUAGE, NUMBERS, SPATIAL RELATIONS, ABSTRACTION AND MEMORY
- FOSTER INDIVIDUAL AND GROUP INTERACTIONS WHICH CONTRIBUTE TO GENERAL SOCIAL COMPETENCE

It is impractical in these Requirements to specity the full range of activities and experiences that are desirable for children in day care. The criteria listed below as minimum standards are intended to outline the means whereby day care operators may provide the type of activities and environment which enhance a child's physical and intellectual growth, his sense of self-worth and respect for the worth of others, his awareness and enjoyment of the world around him, and his knowledge of sound health and safety practices.

Evidence of Satisfactory Compliance

1. There is a written plan or schedule of daily activities for each child or group of children with similar developmental needs which provides:

   (a) guidance and opportunities for physical activities and other activities that promote coordination and perception

   (b) for the use of a variety of games, toys, books, crafts and other activities and materials to en hance the child's intellectual and social development and to broaden his life experiences

   (c) opportunities for individual self-expression in conversation, art, dramatic play, etc.

(d) opportunities for children to work on their own at activities that enhance their independence and self-reliance

(e) opportunities for children to engage in group activities that enhance their understanding of themselves in relation to others

(f) opportunities for school age children to practice or extend the skills and knowledge they are acquiring in school.

2. There is evidence of capability to carry out the daily plan including the availability of materials and equipment suitable to the developmental stage of the child.

3. Watching television does not constitute a significant portion of the daily schedule of activities. Television programs which are viewed must be appropriate to the childrens' ages.

4. Infants and toddlers are allowed (under supervision) to move about freely and to explore their surroundings for substantial periods of each day.

5. There is access to safe outdoor play areas.

I.E. Insuring Continuity with Home and School

DAY CARE ACTIVITIES MUST:

- COMPLEMENT AND SUPPLEMENT THE CHILD'S EXPERIENCES AT HOME AND IN SCHOOL
- REFLECT RESPECT AND UNDERSTANDING OF THE PARENTS' DESIRES FOR THE CARE AND DEVELOPMENT OF THEIR CHILDREN.

Evidence of Satisfactory Compliance

1. At the time of enrollment and thereafter as the need arises, the operator or other appropriate agent of the operator discusses with each parent the child's habits, activities and schedules while at home or in school and his parents' special concerns about his past and future behavior and development. His schedule and activities in day care are designed, to the extent possible, to complement and supplement his experiences at home and in school.

2. Parents are encouraged to visit the facility, observe, and participate in the care of their children. The operator is responsible for contacting parents to exchange information concerning the child.

3. Caregivers' and operators' concerns about the health, development or behavior of any child are communicated to the parent promptly and directly.

4. Each child's cultural and ethnic background and primary language or dialect is respected by his caregivers. Whenever possible, caregivers are able to speak and understand the primary language of each child.

5. The school is notified of the day care placement of a school age child. Communication between school and caregivers takes place in emergencies and in other instances in which the child's total development can be enhanced by such communication.

I.7 Ensuring Adequate Rest for Children

EACH CHILD MUST BE PROVIDED AN OPPORTUNITY FOR REST AND SLEEP APPROPRIATE TO HIS AGE AND TO THE LENGTH OF TIME AND TIME OF DAY THAT HE IS IN DAY CARE.

Evidence of Satisfactory Compliance

1. Each facility includes a designated place where a child can sit quietly or lie down to rest.
2. When children under age 6 are given care for periods longer than 4 hours, there is a time and place for each child to lie down and sleep or rest quietly.
3. Infants are provided a crib or other safe and suitable place. Infants are not routinely left in a crib without direct adult contact for long periods of time while awake (typically not more than one hour).
4. The length of time that a child is allowed or encouraged to rest is determined by his own needs, considering his activity schedule while at home and in school.
5. When children are given care during the evening or night, suitable bedding and facilities for bathing are provided to assure adequate rest and hygiene.

1.G. Ensuring Adequate Nutrition

EACH OPERATOR MUST PROVIDE FOOD SERVICE FOR EACH CHILD THAT:

- MEETS THE CHILD'S NUTRITIONAL NEEDS WHILE IN DAY CARE
- COMPLEMENTS AND SUPPLEMENTS THE CHILD'S DIET AT HOME AND SCHOOL
- RECOGNIZES PERSONAL, CULTURAL AND ETHNIC FOOD PREFERENCES
- IS INTEGRATED INTO THE PROGRAM TO ENHANCE PHYSICAL, SOCIAL AND MENTAL DEVELOPMENT

Evidence of Satisfactory Compliance

1. To the extent possible, information provided by parents concerning the child's eating habits, food preferences or special needs should be considered in day care feeding schedules and menus.

2. At least one nutritious meal is offered to each child in care for 5 hours or more and 2 nutritious meals to each child in care 9 hours or more. A wholesome snack is offered between breakfast and lunch and between lunch and dinner. If a child is in the facility when a meal or snack is served, the child is offered the meal irrespective of how long he is in the facility for day care.

3. Food is not used as a punishment or reward. Children are encouraged but not forced to eat.

4. Infants are fed or supervised individually and their diet is appropriate to their special developmental needs.

I.H. Ensuring Sanitary Food Service

THE FOOD AND DRINK SERVED BY DAY CARE OPERATORS MUST BE:

- CLEAN, WHOLESOME AND SAFE FOR HUMAN CONSUMPTION
- STORED, PREPARED AND SERVED USING SANITARY METHODS AND EQUIPMENT

Evidence of Satisfactory Compliance

1. Food and beverages are obtained from sources complying with local, state and federal codes.

2. Food and beverages are stored in a manner that keeps them free from contamination. Containers of food are clearly labeled. Food and beverages prepared outside the facility are transported in appropriate containers. Heated food or perishables requiring refrigeration are served promptly or refrigerated.

3. Clean-up and dishwashing practices assure that cooking, serving and eating utensils are clean and sanitary.

4. Drinking water is available and provided from sanitary utensils.

5. When bottle fed infants are given care, formula preparation methods meet local health codes, or a ready-to-feed commercially prepared infant formula is used.

I.I. Preventing Accidents

OPERATORS MUST ENSURE THAT THE DAY CARE PROGRAM AND PREMISES MINIMIZE THE RISK OF ACCIDENTAL INJURY TO THE EXTENT POSSIBLE.

Evidence of Satisfactory Compliance

1. Day care activities and premises do not expose children to situations which may be hazardous due to the particular age or capacity of the child.

2. Each caregiver helps children to increase their own awareness of safety practices and accident hazards and to learn how to avoid such hazards.

1.J. Ensuring Care in Emergencies

EVERY FACILITY MUST BE CAPABLE OF SAFEGUARDING EACH CHILD IN CASE OF INJURY OR ILLNESS, OR OF FIRE, FLOOD OR OTHER NATURAL DISASTER.

Evidence of Satisfactory Compliance

1. There is a written and posted plan for evacuation of children in case of fire or other disaster; caregivers are aware of the plan and have evacuation drills at least once a year.

2. A telephone is on the premises and immediately accessible. Emergency phone numbers are conspicuously posted on or adjacent to the phone.

3. A readily understandable chart describing first aid and emergency medical treatment techniques is conspicuously posted in each facility. At least one caregiver or other person present at each facility understands these techniques and is able to follow instructions for their application. In larger facilities there must be at least one caregiver per 30 children who demonstrates knowledge and skills in first aid and emergency medical treatment.

4. There is a planned source of emergency medical care -- a hospital emergency room, clinic or other constantly staffed facility, physician or other health professional -- known to caregivers and acceptable to parents.

5. The number of infants and toddlers unable to walk quickly and purposefully is limited to the number that could be carried by staff personnel in case of fire or other emergency.

6. In a family day care home, a second adult is readily available to be summoned to assist in any emergency.

7. Every facility includes a place where an ill or injured child can rest or play quietly, apart from other children yet under adult supervision.

8. No medicines or drugs are administered to any child except with written permission of the parent. Any medicines or drugs kept at the facility are clearly labeled and are safely stored. Prescription drugs are clearly labeled with the child's name and the dosage.

I.K. Accounting for Supervision of Children

THE OPERATOR OR CAREGIVER MUST KNOW THE WHEREABOUTS AND ACTIVITIES OF EACH CHILD AT ALL TIMES TO A DEGREE:

- APPROPRIATE TO THE DEVELOPMENTAL LEVEL OF THE CHILD
- CONSISTENT WITH THE PARENTS' DESIRE FOR IMMEDIATE SUPERVISION OF THEIR CHILD

Evidence of Satisfactory Compliance

1. Daily attendance records are kept, and all absences are discussed with parents.

2. Each operator is aware of parents' wishes concerning:

    a. Persons with whom the child may leave the facility during or at the end of the day care period.

    b. What activities the child may undertake without direct supervision of the caretaker.

    c. What method a school age child will use to request any out-of-facility activities or last-minute changes in planned activities.

3. A caregiver is within seeing or hearing distance of each child under age 6 at all times. (Children under age 6 should not leave the facility without responsible adult supervision except in rare instances and with due consideration of both the maturity of the child and the safety of the environment.)

I.L. Providing Sufficient Caregivers

EACH FACILITY MUST HAVE SUFFICIENT CAREGIVERS:

- TO PROVIDE FOR THE EMOTIONAL AND INTELLECTUAL DEVELOPMENT OF EACH CHILD
- TO ENSURE INDIVIDUAL ATTENTION TO EACH CHILD AS NECESSARY
- TO PROVIDE FOR EACH CHILD'S PHYSICAL CARE AND PROTECTION

The number of persons actually giving care to children and the amount of adult-child interaction that this makes possible contributes to the quality of the program. For this reason, the caregiver to child ratios in this requirement for centers are based on the number of caregiver hours available for each child during the day, not by an arbitrary number of adults that must be present at any one time. At no time may there be fewer than 1/2 of the caregivers required by the applicable staff ratios for children present in the day care facility at that time.

Only the time of those persons giving direct care to children and meeting the requirements of I.M. may be included in these ratios. For caregivers who hold other positions in the facility, only such time as is devoted exclusively to care of children may be included in these ratios.

The caregiver-child ratios presented below represent minimums. It should be noted that where there are inexperienced caregivers or children with special needs (e.g., handicapped or emotionally disturbed children) the number of caregiver hours should be increased to reflect these circumstances.

Evidence of Satisfactory Compliance

1. In a family day care home there is at least one caregiver for each six children. Where two children under three are present, there is at least one caregiver for each five children; and

where three children under three are present/ there is a caregiver for each four children. Of the children permitted per caregiver, in no case may one caregiver care for more than three children under three or more than two infants. The following table shows the maximum allowable combination of children aged 3-14, toddlers and infants per caregiver in a family day care home.

Family Day Care Homes: Maximum Children Per Caregiver

If there are this many Infants	and Toddlers	there may be up to this many children aged 3-14	for a Child/Caregiver Ratio of
0	0	6	6
1	0	5	6
0	1	5	6
2	0	3	5
0	2	3	5
1	1	3	5
2	1	1	4
1	2	1	4
0	3	1	4

2. In a day care center, the ratio of caregivers to children equals or exceeds one caregiver for each:

3 infants -- age 0 through 18 months

4 toddlers -- age 19 through 35 months

7 children -- age 36 through 53 months

10 children -- age 54 months through 71 months

13 children -- age 6 years through age 8

16 children -- age 9 years through age 11

20 children -- age 12 years through age 14

The above ratios are to be used in computing the number of caregiver hours required in a center.

For the purpose of such computations the number of children is considered to be the estimated daily attendance based on past attendance records using the monthly, quarterly or seasonal average. Newly opened facilities must schedule caregivers on the basis of enrollment until average attendance over a two-month period has stabilized.

Only personnel who meet the requirements of I.M. and who spend at least 25% of their time providing direct care for children may be counted as caregivers.

The use of volunteers is encouraged, but their time may not be counted as caregiver time in meeting these ratios.

Total caregiver hours in a center must equal or exceed the sum of the caregiver hours required for each age group but at no time may there be less than 1/2 the caregivers required by the applicable ratios for children in the facility at that time.

The following chart, Computation of Required Daily Caregiver Hours in Centers, illustrates how the total required caregiver hours would be computed for a hypothetical center with children of different age groups and for combinations of children in full and part day care. The figures in Column B are the required caregiver ratios listed above; the figures in Column C are illustrative of estimated daily attendance in a hypothetical center. The result is that the center must schedule a daily minimum of 55 hours of caregiver time devoted directly to the care of children.

COMPUTATION OF REQUIRED DAILY CAREGIVER HOURS IN CENTERS

COLUMN A	COLUMN B	COLUMN C	COLUMN D
Age Group of Child	Required Ratio	*Number of Child Hours in Day Care Per Day	Caregiver Hours Needed (Column C ÷ Column B)
Infants	3	30	10
Toddlers	4	60	15
36 thru 53 months	7	70	10
54 months thru 71 months	10	120	12
School agers 6 thru 8	13	78	6
School agers 9-11	16	30	2
School agers 12-14	20	0	0
Total Minimum Required Caregiver Hours Per Day			55

*Number of child hours is the estimated daily attendance x the average hours each child spends per day in the day care facility.

I.M. Ensuring the Competence of Caregivers

EACH CAREGIVER MUST HAVE THE SKILL AND COMPETENCY NECESSARY TO CONTRIBUTE TO EACH CHILD'S PHYSICAL, INTELLECTUAL, PERSONAL AND SOCIAL DEVELOPMENT.

It is impractical to include a detailed description of all the skills and knowledge caregivers should possess in order to provide developmental experiences for children in their care. The criteria listed below as MINIMUM standards basically describe a person who is emotionally warm and able to deal comfortably with the natural noise and activity of young children. Such a person is also aware of the differing abilities and interests of children of different ages and able to plan creative activities for the children. It is expected that through formal and informal training caregivers will increase their knowledge of the practices which promote sound development of language skills, self-esteem, and the many other aspects of human development which are essential for a satisfying childhood and adult life.

Evidence of Satisfactory Compliance

1. Each caregiver must be at least 18 years of age and must be able to read and write. (The presence of persons below the age of 18 is encouraged, but such persons may not be counted toward meeting the requirements of I.L.)

2. Each caregiver must be able to carry out the activities described in Section I.D.1, Ensuring the Continuing Development of Children.

3. Each caregiver must be able to provide evidence that he or she meets the health requirements specified in I.O.

4. Each caregiver must:

   a. be able to work with children without recourse to physical punishment or psychological abuse

b. be able to praise and encourage children and provide them with a variety of learning and social experiences appropriate to the age of the children served

c. be able to communicate with parents and children in their own language whenever possible

d. be able to recognize and act against hazards to physical safety

e. possess the capacity and willingness to increase skills and competence through experience, training, and supervision.

5. Each center enrolling 30 or more children has at least one employee in the facility at least 50% of the time the center is open, who meets one of the following qualifications:

a. Bachelor or Associate Arts degree with at least 12 semester hours in child development, child psychology, child health, education, or directly related fields, or

b. a high school diploma, or its equivalent, plus at least three years of satisfactory experience in an educational, early childhood or day care program, or

c. certification as a Child Development Associate or similar status where a local, state or Federal certification program exists.

NOTE: The person operating a family day care home or a small center may be simultaneously a caregiver and an operator. In this case, he or she must meet the requirements of both this section and section I.N.

I.N. Ensuring the Accountability of Operators

THE OPERATOR OF A DAY CARE FACILITY MUST HAVE:

- THE SKILLS NECESSARY TO MANAGE A DAY CARE PROGRAM
- THE ABILITY TO RELATE EFFECTIVELY TO PARENTS AND THE COMMUNITY
- THE ABILITY AND WILLINGNESS TO PROVIDE A DEVELOPMENTAL CHILD CARE PROGRAM WHICH MEETS THE STANDARDS SET FORTH IN THESE REQUIREMENTS.

Evidence of Satisfactory Compliance

1. The operator of a day care facility:
   a. must provide a child care program and facility which meets the standards set forth in these requirements
   b. must maintain adequate enrollment, attendance, financial, and related records
   c. must accept responsibility for the screening, scheduling, supervision, and conduct of any staff, volunteers, or others who provide services in the facility
   d. endeavors to cooperate with the appropriate administering agency in all reasonable efforts to improve the quality of care and the competence of caregivers
   e. is willing to inform parents and other interested persons about the goals, policies, and content of the day care program which he or she operates
   f. has achieved the locally applicable legal age of majority.

I.O. Ensuring a Healthy Staff

DAY CARE STAFF CARING FOR OR COMING INTO CONTACT WITH CHILDREN MUST BE IN SUFFICIENT PHYSICAL AND MENTAL HEALTH TO:

- SAFELY PERFORM THEIR ASSIGNED DUTIES
- POSE NO THREAT TO THE PHYSICAL OR MENTAL HEALTH OF THE CHILDREN

Evidence of Satisfactory Compliance

1. The administering agency has written evidence, renewed yearly, that each staff member, volunteer, driver, food handler or other person having regular contact with the children is free from tuberculosis, syphilis and other communicable diseases.
2. Caregivers who have illnesses that may pose a threat to children should be relieved of their duties. The operator or administering agency has made adequate arrangements in advance for substitutes.

I.P. Admissions Procedures

ADMISSION TO A DAY CARE FACILITY MUST:

- BE NON-DISCRIMINATORY
- ASSURE INITIAL AND CONTINUING COMMUNICATION BETWEEN THE PARENTS AND THE OPERATOR AND CAREGIVER ABOUT THEIR MUTUAL RESPONSIBILITIES
- PROVIDE PARENTS WITH INFORMATION AND COUNSELING REGARDING THE APPROPRIATENESS OF THE DAY CARE FACILITY FOR THEIR CHILD

Evidence of Satisfactory Compliance

1. Admissions policies, access to services, and treatment while in the program do not discriminate among children or families on the basis of race, color, creed, religion, marital status or age of parents, sex, or national origin.

2. The goals, policies, and activities of the day care program are presented and explained to parents at the time of enrollment. Parents are counseled regarding the appropriateness of the day care facility for their child.

3. A clearly stated written procedure developed by the administering agency by which a parent may take grievances to that agency is presented and explained to each parent.

4. The operator has on file for each child a written record including:

    a. The child's full legal name, birthdate and current address, and his preferred name(s).

    b. The name and address of the parent (or guardian) and of any other person or agency responsible for care of the child.

c. Telephone numbers or instructions as to how the person(s) responsible for the child can be reached during the time the child is in day care.

d. Names and addresses of persons authorized to take the child from the day care facility.

e. Names, addresses and telephone numbers of persons who can assume responsibility for the child if, in an emergency, the parent(s) cannot be reached.

f. A statement of any health and other special problems in the child or family which might affect his attendance or participation in day care and the name and telephone number of the child's regular source of health care.

g. Notations of communication with parents about significant health and behavior problems.

I.Q. Ensuring Parent Participation in Decision Making

PARENTS MUST BE GIVEN THE NECESSARY INFORMATION AND OPPORTUNITY TO BE INVOLVED IN THE POLICIES, GOALS, AND PROCEDURES OF THE DAY CARE PROGRAMS IN WHICH THEIR CHILDREN ARE ENROLLED.

Evidence of Satisfactory Compliance

1. Each day care facility serving 15 or more children has a policy advisory council. At least 50% of the members of each policy advisory council must be parents of the children served.

2. The policy advisory council shall approve project grant applications for Federal operating funds before submission.

3. The policy advisory council shall periodically review the policies and practices of the day care facility to determine compliance with these requirements. Where discrepancies noted cannot be resolved between the parent policy advisory council and the operator, the remaining difficulties should be brought to the attention of the administering agency.

SECTION II

REQUIREMENTS FOR ADMINISTERING AGENCIES

II.A. Ensuring Compliance with Requirements

THE ADMINISTERING AGENCY MUST ARRANGE FOR SYSTEMATIC AND PERIODIC MONITORING OF FACILITIES AND PROGRAMS TO ENSURE CONTINUING COMPLIANCE WITH THESE REQUIREMENTS.

Evidence of Satisfactory Compliance

1. The administering agency has written evidence that each facility has been observed and evaluated periodically (at least annually). Deficiencies in compliance must be corrected within designated time periods appropriate to the seriousness of the deficiency.

2. The administering agency has an acceptable plan and adequate staff to provide for such monitoring.

3. The administering agency has acceptable procedures to evaluate and take appropriate action in response to complaints from parents and policy advisory councils.

II.B. Arranging Health Services

THE ADMINISTERING AGENCY MUST ENSURE THAT EACH CHILD ENROLLED IN DAY CARE RECEIVES:

- REGULAR HEALTH EVALUATION AND SUPERVISION SERVICES
- ASSISTANCE IN OBTAINING MEDICAL AND DENTAL TREATMENT FOR SIGNIFICANT PROBLEMS IDENTIFIED

The administering agency must plan and implement a program that utilizes existing health services and programs to the greatest extent possible consistent with continuous and coordinated care for each child. To the extent made possible by federal funds for day care, it may purchase those services which are necessary to meet needs which cannot otherwise be met through existing health programs and services. The full use of existing resources helps assure that the child will have services available to him after he leaves the day care program and that other family members will be introduced to services and sources of funds that they too can utilize.

Evidence of Satisfactory Compliance

1. For each child, there is a statement from a physician, clinic, or other qualified provider of health services on file with the operator or administering agency indicating:

    a. that the child's health has been evaluated through appropriate screening tests, interview with parents, and physical examination,

    b. that the results of the health evaluation have been communicated to the child's parent(s),

c. that needed immunizations have been or are being provided,

d. recommendations for special care while the child is in a day care facility.

A new statement must be provided after 6 months for a child less than 36 months of age and after 12 months for a child 36 months old or older.

2. For each child 36 months or older, there is a statement from a dentist, clinic or other qualified provider of dental health services indicating that:

   a. the child's dental health has been evaluated,

   b. that the results of the dental evaluation have been communicated to the child's parent(s),

   c. necessary preventive measures have been or are being provided.

3. Evidence of medical and dental evaluation and immunization is available within 2 months of the child's enrollment.

4. Where treatment for significant health and dental problems is indicated, the administering agency has offered specific assistance in obtaining such treatment, if the parents desire, but are unable to secure such services for themselves.

5. No child is excluded from the day care program for the purpose of avoiding the administering agency's responsibility for medical and dental care.

6. The administering agency has an acceptable plan for carrying out the above, including a regular source of health consultation, and a statement available to operators covering standard operating procedure on such matters as emergency care and use of medications.

II. C. Arranging Psychological and Social Services

THE ADMINISTERING AGENCY MUST ENSURE THAT:

- BEHAVIOR AND LEARNING PROBLEMS OF CHILDREN IN DAY CARE ARE IDENTIFIED
- PARENTS RECEIVE ASSISTANCE IN OBTAINING PSYCHOLOGICAL AND MENTAL HEALTH EVALUATION FOR THEIR CHILDREN AND IN OBTAINING TREATMENT FOR SIGNIFICANT PROBLEMS IDENTIFIED
- PARENTS AND CAREGIVERS ARE INFORMED ABOUT AND HAVE ACCESS TO THE SOCIAL SERVICES AVAILABLE IN THE COMMUNITY

The administering agency must plan a program that utilizes existing mental health and social services and programs to the greatest extent possible consistent with continuous and coordinated care for each child. To the extent made possible by federal funds for day care, it may purchase those services which are necessary to meet needs which cannot otherwise be met through existing mental health and social service programs. The full use of existing resources helps assure that the child will have services available to him after he leaves the day care program and that other family members will be introduced to services and sources of funds that they too can utilize.

Evidence of Satisfactory Compliance

1. The administering agency has developed an acceptable plan:
    a. for assisting operators and caregivers in identifying significant behavior and learning problems
    b. for ensuring that such problems are promptly reported to the child's parents and to the administering agency

  c. for assisting operators and parents in securing psychological and mental health evaluation and treatment when they desire but are not able to secure such services for themselves.

2. There is a record on file with the operator or administering agency for each child reported to have a significant problem indicating that:

   a. the problem has been evaluated by a competent psychological, mental health or medical practitioner,

   b. recommendations for special care or management while in school or day care have been communicated to the parents and caregiver.

3. The administering agency possesses and makes available a current list of the social services and social services agencies in the community.

4. The phone number to call for information about social services is posted at each facility and a general description of the kinds of services available has been provided to each operator.

II.D. Providing Training

THE ADMINISTERING AGENCY MUST PROVIDE OR ARRANGE TRAINING AS MAY BE NECESSARY TO OFFER CAREGIVERS AND OPERATORS OPPORTUNITIES TO DEVELOP HIGHER LEVELS OF COMPETENCE

Evidence of Satisfactory Compliance

1. The administering agency has developed an acceptable plan for providing or arranging for the training of caregivers and operators to increase their skills and competencies.

II.E. Ensuring Parent Participation in Decision Making

PARENTS MUST BE GIVEN THE NECESSARY INFORMATION AND OPPORTUNITY TO ADVISE ON THE POLICIES, GOALS AND PROCEDURES OF THE DAY CARE ADMINISTERING AGENCY.

Evidence of Satisfactory Compliance

1. Every administering agency has an advisory group which includes parents of children enrolled in day care.

2. Upon request, information is provided to parents on administering agency policies, practices, budgets and evaluations.

II.F. Ensuring Transportation Safety

WHEN DAY CARE PROGRAMS PROVIDE OR ARRANGE FOR THE TRANSPORTATION OF CHILDREN, THE ADMINISTERING AGENCY MUST ENSURE:

- ADEQUATE SUPERVISION AND PASSENGER RESTRAINTS FOR CHILDREN BEING TRANSPORTED
- USE OF SAFE VEHICLES AND DRIVING PRACTICES
- AVOIDANCE OF EXCESSIVELY PROLONGED PERIODS SPENT RIDING IN VEHICLES

Evidence of Satisfactory Compliance

1. All vehicles and drivers are inspected and licensed according to state law and are insured for liability to passengers.

2. Children are picked up and dropped off at places that are safe from traffic hazards.

3. Whatever safety and supervision requirements are applicable to school transportation services in the community are met by transportation services used in day care.

4. Transportation routes must not be so long or circuitous as to subject children to unnecessarily long riding times.

5. For children six years and under, a suitable infant restraint or seat belt is available for each child and is used whenever the vehicle is in motion.

6. For children six years and under, the driver or attendant supervises each child from his residence (or supervised waiting group) to the care of an authorized adult at the day care facility and back to the care of an authorized adult at the child's residence.

7. For children age 3 through 6, an attendant in addition to the driver is present if more than 10 children are in one vehicle, two attendants are present for more than 20 children, and three attendants for more than 40 children.

8. For infants and toddlers age 0 through 35 months, an attendant in addition to the driver is present if more than 2 infants and toddlers are present in one vehicle; two attendants are present if 7 or more infants and toddlers are present in one vehicle; and a supervision ratio of one adult (including driver) to three infants and toddlers is maintained for larger numbers. No infant or toddler is left unattended in a vehicle.

Exception - children 6 years and under who are enrolled in a formal school program may utilize the type of transportation services provided by the school system to get to or from the day care facility.

SECTION III

REQUIREMENTS FOR IN-HOME CARE

III. IN-HOME CARE

WHEN IN-HOME CARE IS ARRANGED BY THE ADMINISTERING AGENCY IT MUST ENSURE THAT:

- CAREGIVERS ARE COMPETENT AND HEALTHY
- TRAINING, HEALTH, PSYCHOLOGICAL, AND SOCIAL SERVICES ARE AVAILABLE

Evidence of Satisfactory Compliance

1. Caregivers possess the minimum requirements described in Sections I.M. and I.O.
2. Training of caregivers is made available to the caregiver in accordance with the requirements in Section II.D.
3. Adequate meals and snacks are provided for the children during the time the caregiver is present.
4. Health, psychological, and social services are made available in accordance with the requirements of Sections II.B. and II.C.

WHEN PARENTS INTEND TO ARRANGE IN-HOME CARE, THE ADMINISTERING AGENCY MUST:

- INFORM THE PARENTS ABOUT OTHER AVAILABLE ARRANGEMENTS
- ENSURE THAT NECESSARY TRAINING, HEALTH, PSYCHOLOGICAL AND SOCIAL SERVICES ARE AVAILABLE

Evidence of Satisfactory Compliance

1. The Administering Agency has on file a statement from the parent acknowledging that:
   a. available alternative day care arrangements were offered to the parent by the administering agency
   b. the administering agency has offered to make available health, psychological, social services and training for the caregiver in accordance with the requirements of Sections II.B, II.C., and II.D.
2. The Administering Agency has on file, for each in-home caregiver selected by the parents:
   a. the caregiver's name, address, telephone and social security number
   b. assurance that the caregiver selected by the parent is at least 16 years of age
   c. evidence the caregiver has complied with I.O.1.